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The Academic Program



1987-1988

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Elizabethtown College

Calendar 1987-88

Fall Semester

August	24-28	Faculty Meetings and Orientation
	29	Freshmen Arrive
	31	Registration Day; Evening Classes Begin at 6:30 p.m.
September	1	Day Classes Begin, 8:00 a.m.
	7	Labor Day — No Classes
	8	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
	14	Opening Convocation
October	26	Parents Day
	9-11	Fall Break — No Classes
	17	Homecoming
	21	Mid-Term
November	25	Friday Schedule of Day Classes; Classes End at 5 p.m.
	26-29	Thanksgiving Recess
	30	Classes Resume, 8:00 a.m.
December	11	Classes End
	14-19	Final Examinations

Spring Semester

January	11-15	Faculty Meetings and In-Service Programs
	18	Registration Day
	19	Classes Begin, 8:00 a.m.
March	4	Mid-Term
	5-13	Spring Break — No Classes
	14	Classes Resume 8:00 a.m.
	31	Easter Recess Begins 5:00 p.m.
April	4	Evening Classes Resume at 6:30 p.m.
	5	Day Classes Resume 8:00 a.m.
		Monday Schedule of Day Classes
May	6	Classes End
	9-14	Final Examinations
	21	85th Commencement

Summer Sessions

May 23-June 24	Summer Session I
June 27-July 29	Summer Session II
June 13-July 29	Evening Summer Session

Elizabethtown College is accredited by the Middle States Association of Colleges and Secondary Schools.

The policies and provisions contained in this catalog are subject to the right of the trustees, administration, and faculty to repeal, change, or amend them at any time.

The provisions of this booklet are not to be regarded as an irrevocable contract between Elizabethtown College and the student or between the College and the parents or guardians of the students.

Elizabethtown College complies with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable, federal, state, and local statutes, ordinances, and regulations. Elizabethtown College does not illegally discriminate against students, prospective students, employees, or prospective employees on the basis of race, color, religion, ethnic or national origin, personal handicap, age, or sex.

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The Academic Program



Contents

Statement of Purpose
The Academic Program
Course Descriptions

<i>Accounting</i>	16
<i>Anthropology</i>	53
<i>Biology</i>	12
<i>Business</i>	15
<i>Chemistry</i>	20
<i>Communications</i>	22
<i>Computer Science</i>	25

<i>Education</i>	28
<i>English</i>	29
<i>Fine and Performing Arts</i>	32
(Art, Dance, Music, Theatre)	
<i>History</i>	37
<i>Mathematical Sciences</i>	38
<i>Modern Languages</i>	41
(French, German, Spanish)	
<i>Occupational Therapy</i>	42
<i>Physical Education and</i>	
<i>Health</i>	45

<i>Physics and Earth Science</i> ...	46
<i>Political Science</i>	48
<i>Psychology</i>	50
<i>Religion and Philosophy</i>	51
<i>Sociology, Social Work</i>	
<i>and Anthropology</i>	53
<i>Interdisciplinary Programs</i> ...	57
<i>Directory</i>	62
<i>Index</i>	71

1987-1988

Elizabethtown College

Elizabethtown, Pennsylvania 17022-2298

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ELIZABETHTOWN COLLEGE
ELIZABETHTOWN, PENNA.

Statement of Purpose of Elizabethtown College

Elizabethtown College aims to prepare men and women capable of sound intellectual judgment, with a keen moral sense, and a full appreciation for the beautiful in our world. In keeping with its Brethren tradition, and in affirmation of the values of peace, justice, and human dignity which are rooted in this tradition, the College strives to achieve a union between the world of work and the world of spirit. Proud of its past, the College is moving confidently toward the 21st Century, committed to excellence, demanding the best of everyone, yet always sensitive to personal needs.

The purpose of Elizabethtown College has historically been expressed in the phrase, "Educate for service." Students learn to serve their fellow human beings through an educational process designed to foster the development of maturity, the capacity of independent judgment and a commitment to personal integrity. In being true to its past, Elizabethtown College is alive to its future.

The College affirms a relationship between those academic disciplines which primarily prepare students with the mental skills and specialized knowledge to undertake successful personal careers in business, industry, and the professions; and those disciplines

which primarily foster the knowledge of cultural heritage, the ability to communicate effectively, the capacity for long-term and continuous self-education for reflective moral and spiritual powers of mind, and for a deep sense of personal integrity.

Ideally, Elizabethtown College graduates should be able to serve themselves and others freely and responsibly in an environment characterized by social, cultural, ethical, spiritual, and physical uncertainties. The College seeks to foster that balanced pragmatic mixture of professional and humanistic studies that has historically characterized liberally educated men and women.

The achievement of ideal balance of curricular studies for undergraduate students depends upon diversity of intellectual inquiry and outlook by both teachers and students within the disciplines represented in its curriculum, and upon variety of responsible expression of scholarly opinion. The College welcomes a mixture of students of varied ages, backgrounds, traditions, interests and needs, as these can be accommodated within the existing curriculum. It commits itself to fostering excellence in educational achievement and to strengthening intellectual curiosity.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of at least 128 semester hours of credit, a grade point average of at least 2.00 in the major, a grade point average of at least 2.00 overall, and the completion of all requirements of the major and the General Education Core.

The College offers four additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, the Associate of Arts, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B.S.
Business Administration, B.S.
Business Education (Business), B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Early Childhood Education, B.S.
Economics (Business), B.A., B.S.
Elementary Education, B.S.
Engineering (Physics and Earth Science), B.A.
English, B.A.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages, B.A.
(French, German, Spanish)
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.
Occupational Therapy, B.S.
Physics, B.S.
Political Science, B.A.
Psychology, B.A., B.S.
Religion and Philosophy, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work (Sociology), B.A.
Sociology, B.A., B.S.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Anthropology (Sociology)
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Computer Science
Economics (Business)
English
History
International Studies (Interdisciplinary)
Mathematics
Modern Language
(French, German or Spanish)
Music
Physics
Political Science
Psychology
Religion and Philosophy
Sociology
Statistics (Mathematics)

The Writing Competency Requirement

An incoming freshman whose record fails to demonstrate basic language skills and writing ability is required to take either (1) English 101 (Basic English) followed by English 102 (Expository Writing) or (2) English 102. A student who demonstrates a high level of proficiency in language and writing skills is permitted to proceed directly to English 105 (Introduction to Literature).

No credit is granted for English 101 if it is taken after the successful completion of English 102.

The General Education Core

Through the General Education Core curriculum, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to pursue a general comprehensive education which complements both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: prescribed individual course requirements and area distribution requirements in which students may choose from approved courses within the general prescribed academic area. (Approved courses are identified in the course listings.)

Alternatives to the Core curriculum, or deviations

from it, must be approved by the Academic Standing Committee.

Core Area Requirements

Area	B.A. Hours	B.S. Hours
Literature	6	6
Complete English 105 and one other course from among the English, French, Spanish, or German literature courses. Note: courses in composition, literary criticism, history of the language, professional writing, or the teaching of English do not fulfill the literature Core requirement.		

Modern Language	5	5*
Complete Modern Language 112 or demonstrate competence at that level by taking a placement test. All students with more than one year of high school language study must take the placement test. Depending on language background and test results, students may merit exemption from Modern Language 112 and enroll in upper-level language courses, or take Modern Language 112 for credit and fulfill the language requirement, or take Modern Language 111 and 112 for credit and fulfill the requirement.		

*Some majors require a language for a bachelor of science degree; students should check the program description in this catalog.

Fine Arts	3	3
Complete three hours in art, theater, or music courses.		

Religion and Philosophy	6	6
Complete the required hours in philosophy and/or religion courses.		

History	6	6
Complete History 105 and one other history course.		

Social Science	9	9
Complete the required hours in economics, political science, psychology, anthropology, and sociology courses.		

Mathematics	3	6
Complete the required hours in mathematics courses. Note: Mathematics 011 does not fulfill the mathematics Core requirement or count toward credit for graduation.		

Science	8	8
Complete the required hours from among biology, chemistry, physics, and earth science courses. Students must take the associated laboratory if the course is to count for Core.		

Physical Education	4	4
Complete four activity courses, including at least one but not more than two aquatics activities. Physical Education 270 counts as three hours towards graduation, but fulfills only one credit towards Core. Physical Education 150, 160, 260 count for Core credit		

only once each. No more than six physical education credits may be counted for graduation. Course titles may not be repeated; no student who passes a swimming course may take the swimming proficiency test for credit.

A **swimming proficiency test**, given at the beginning of each semester, must be taken no later than the fall of the sophomore year. This test may be taken only once. A transfer student who desires to take the test must do so at the beginning of the student's first semester.

College Requirement

Area	B.A. Hours	B.S. Hours
International Education	6	6

All students must take a minimum of six semester hours of course work above the 100 level in foreign cultures or international affairs, contemporary or historical. This requirement can be met with courses taken in the Core, major, minor, or elective areas.

The following courses have been designated to fulfill this requirement.

Anthropology 202, 211, 307, 308.
Art 355.
Business Administration 317, 371.
Economics 307, 308, 371, 372.
English 320, 322, 323, 327, 328, 329.
History 205, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 323, 324, 327, 328.
Modern Foreign Languages (French, German, Spanish) 112, 211, 212, 311, 312.
Music 441.
Political Science 205, 301, 342.
Religion 221, 222.

Program Variations and Options

In addition to the majors and minors indicated above, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Honors Courses

Each year outstanding freshmen are invited into several honors courses in the General Education Program. Enrollments are limited to fifteen students each, thus allowing greater opportunity for student participation in class discussion. Honors courses are designated with an "H" preceding the course number.

Special Studies

Elizabethtown College recognizes the advantages and

the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued, securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Registrar at the beginning of the semester during which it will be completed. Application forms for Independent Study are available at the Registrar's Office.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional tuition charge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 18 hours as a result of the Directed Study registration are charged the current part-time rate for tuition for those hours in excess of 18, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: For all special studies, the student must register in the Registrar's Office.

Off-Campus Study

Study Abroad

The College participates in programs offering study abroad in Germany, France, Spain, China, and England.

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering a junior year of study in Germany, France, China, or Spain. Students may

study at Phillips-Universität, Marburg/Lahn, West Germany; at the University of Strasbourg, France; at the University of Barcelona, Spain; or at Dalian Institute of Foreign Languages, Dalian, China. A wide selection of courses is offered in the social sciences and the humanities. Students are given intensive language instruction prior to the opening of the university semesters.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of the second year of German in college and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of two college years of French or Spanish, outstanding students who have completed the first year of language study will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country. The credits earned abroad are transferred toward the degree at Elizabethtown. A faculty adviser is in residence in Europe during the year.

The program accommodates about 25 students at each university; Elizabethtown College has a quota of three or four for each. Interested students should confer with Dr. J. Kenneth Kreider, BCA Program Coordinator, and their major adviser.

As part of the BCA program, the College offers a semester in England. Students attend full-time at St. Mary's College, Cheltenham, England, where they enroll in a Seminar in British Culture and Education, and select an additional three or four courses. Credit for these courses is applied toward the degree at Elizabethtown College. Fall semester students depart in early September and return before Christmas; spring semester students depart in late January and return in late May. For information, contact Dr. Kreider.

Joint Institution Programs

In these programs students study at the College and at affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: preforestry with Duke University; preengineering with Pennsylvania State University; preallied health, and biology health professions with Thomas Jefferson University.

In the **Preforestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Preengineering is a 3-2 program with Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of work in an engineering field, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from Pennsylvania State University. For further details, see the description in the Physics Department listing of the catalog.

The **Biology Health Professions** major is a 3-2 pro-

gram with Thomas Jefferson University College of Allied Health Sciences. The student spends three years at the College; after a year at Thomas Jefferson, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional upper division program results in the awarding of a bachelor of science degree from Thomas Jefferson University. For further details, consult the Biology Department listing.

In the **Preallied Health** programs, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Biology Department listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students's education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Music, Occupational Therapy, Sociology/Anthropology /Social Work, and Chemistry.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the Registrar or Department Chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

The Student's Program

Each student is responsible for meeting all graduation requirements. In consultation with an advisor, each student should carefully prepare a course of study.

The student's academic program in the first two years is largely intended to fulfill the requirements of the General Education Core, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Full-time/part-time status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking 11 or fewer hours per semester pays the regular semester hour rate plus applicable fees, and receives a library card and full use of the library facilities. In a summer session, students holding a Pennsylvania Higher Education Assistance Agency (PHEAA) grant are considered full-time if they carry a minimum of 12 semester hours divided among the terms. Tuition and

fees are paid according to the schedule in the summer session brochure. For further details concerning summer session, consult the summer session brochure available from the Registrar's or Continuing Education offices.

Course Load

Since the completion of at least 128 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of at least 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

A student with average grades may carry up to 18 semester hours of work in any given semester except the summer session, when the maximum is 14 semester hours for the 10-week period. A student who has achieved a cumulative grade point average of 3.00 or above may carry up to 20 semester hours credit in a semester, or 16 semester hours credit in a summer session. For each semester hour above 18 for which a student is enrolled in a given semester, an additional fee is charged, and approval by the Associate Dean of the Faculty is required. Students who wish to petition for an overload should obtain a form in the Registrar's office.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the Provost, who will direct warranted appeals to the Academic Standing Committee.

Graduation Requirements

Credit Requirements

To receive a bachelor of arts or bachelor of science degree from Elizabethtown College, the student must earn at least 128 semester hours credit or 130 semester hours if Mathematics 011 was completed. In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the course outline (see departmental listings for specific information).

Program Requirements

Students are required to successfully complete all requirements of the major and all of the General Education core requirements. The College does not guarantee graduation to any student unable to com-

plete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a quality point-credit ratio of at least 2.00, with a minimum average of 2.00 in a major (and a 2.00 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have a ratio of at least 2.00 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in the major, at least eight of which are at the upper level (normally 300 and 400 level), and 2) at least 30 of the last 60 credits.

Note: Credits earned at the University Center in Harrisburg or in the BCA program while the student is matriculated at the College, are considered on-campus credits.

Graduation with Honors

At the time of graduation, a student who achieves cumulative quality point-credit ratio of 3.50 is graduated *cum laude*; a ratio of 3.75, *magna cum laude*; a ratio of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and grade point average meets the requirements listed above.

Other Requirements

Graduation requirements are governed by the catalog and the Program Guide Book issued by the Registrar dated four years prior to graduation, or by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or the one in effect at the time of graduation.

In no case, however, may a student use a catalog dated more than four years prior to graduation to determine requirements for a degree.

Elizabethtown College will graduate only those

students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the Registrar by February 15.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. A student may register either as a regular or a nondegree student, and as full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is not guarantee that a student will be registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for taking courses in sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit for the next semester.

Students preregister for the fall semester at the beginning of April. Preregistration for the spring semester usually takes place in late November. Master schedules and course request cards are furnished to the student approximately three weeks prior to this date, to allow ample time to make an appointment with the adviser.

Evening students should check with the Office of Continuing Education for details about registration.

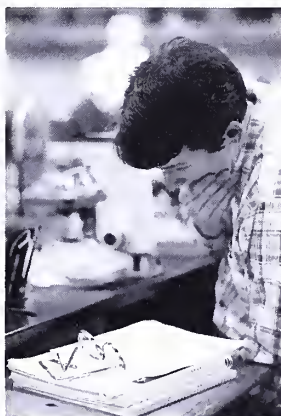
Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Withdrawal from a class must be approved by the academic adviser and completed through the Registrar's Office. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.



Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	Non-Pass (failure)
AUD	Audit

Quality Points

A 4-point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester Hour of Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Incomplete Grades

A grade of I may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of I are given for extenuating circumstances only. They are not assigned simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the I in cases of suspected academic dishonesty.

All grades of I received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of F.

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their required physical education courses on a pass/no pass basis. In addition, students may select one other course per

semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).

2. The cumulative average must be 2.75 or higher.

3. The selected course may carry no more than four semester hours of credit and must be a free elective. It must be outside the major or minor department, may not satisfy a Core requirement, and may not be a course required by the major or minor.

4. No more than four courses in total (excluding physical education) may be taken under this grading option.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits a junior; with 90 credits a senior.

Rank in Class

The student's rank in class at graduation is based on the credits, grades, and quality points earned at Elizabethtown College.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Registrar's Office. Courses which may be repeated follow:

1. A student may repeat any course in which the student receives an F or NP.

2. Ordinarily a student may not repeat a course in which a grade of D is earned. However, upon the request of the student's adviser and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a course that is prerequisite to a General Education Core requirement. The student must repeat the course in which the D grade was received within one year of the original enrollment in the class (or the next semester in which the course is offered if the course is offered less frequently than once a year).

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit is determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the below-average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor may dismiss a student from a course for excessive absences. A student may appeal for reinstatement to the Academic Standing Committee.

A student with excessive absences due to ill health or other personal problems should consult with the professor.

Voluntary Withdrawal from College and Classes

Withdrawal from college

Full-time students withdraw from the College through the Center for Counseling and Student Development; part-time students withdraw through the Registrar's Office. For purposes of billing, room reservation, and academic responsibility, the effective date of withdrawal is the date on which the completed official notice is returned to the Center for Counseling and Student Development or the Registrar's Office. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Withdrawal from classes

Students withdraw from classes through the Registrar's Office. The appropriate form must be signed by the student's adviser and the professor for the course. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or W/F. All withdrawals after

the end of the eleventh week of the semester receive grades of W/F unless the withdrawal from College is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of W/F is calculated into the student average as through it were an F.

Academic Standing

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

<i>Semester hours Completed</i>	<i>with</i>	<i>Cumulative Grade Point below:</i>
1-18		1.70
19-36		1.80
37-54		1.90
55-72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses per term.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is on academic probation. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) or on academic probation may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence from the College of *five successive years* may, upon fulfilling certain requirements, have previous grades of F removed from the cumulative grade point average. For full information, the student should consult with the Registrar.

Academic Honors

Dean's List

A full-time student who earns a quality point-credit ratio of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

Students who have earned at least 60 credits at Elizabethtown College and have attained a 3.75 cumulative quality point average are recognized as College Scholars for the succeeding academic year. They are awarded a special certificate and their status as College Scholars is recorded on their permanent records.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative quality point-credit ratio of 3.50 is graduated *cum laude*; a ratio of 3.75, *magna cum laude*; a ratio of 3.90, *summa cum laude*.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's Honor List during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis.

Honors Courses

Each year outstanding freshmen are invited into several honors courses of the General Education Program. Enrollments are limited to fifteen students each, thus allowing greater opportunity for student participation in class discussion.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (CEEB), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) more than three years ago may be awarded Elizabethtown College credits according to the following standards.

- All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or better on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in process at the time of the examination.
- For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Four of these credits may be applied to the General Education Core requirements in science.
- For the examination in English Composition, Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the General Education Core requirements.
- For the Mathematics Examination, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the General Education Core requirement in mathematics.

2. Subject Examinations

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared for the regularly admitted student by Elizabethtown College faculty. There are two types of Challenge Tests: Tests for Academic Credit and Tests for Placement and/or Waiver.

Tests for Academic Credit are of two kinds: *Proficiency Tests* such as the swimming proficiency test; and the *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College

catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option.

Tests for Placement and/or Waiver comprise tests such as those given for placement in English, modern languages, or mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

The fee for a Test for Academic Credit is \$50. The fee is for the test itself and is charged without regard to the test results. A fee of \$25 is charged for Tests for Placement and/or Waiver. Challenge Tests given at the initiative of the College are administered without fee to the student.

Transfer of Credits

Students wishing to transfer credits to Elizabethtown College should obtain a permission form in advance from the Registrar's Office. The College normally transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C or better is obtained.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the Registrar. Students must request the Registrar's Office of the transferring institution to send an official transcript to the Registrar's Office at Elizabethtown College.

Students desiring to transfer credits from Elizabethtown College to another institution must make the request in writing to the Registrar's Office, in person or by mail, at least one week prior to the date needed.

Leave of Absence

A student may take a leave of absence from the College to study abroad in the BCA program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Any administration fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately by March 15 or October 15. The preregistration card and a \$200 deposit must be returned to the Registrar's Office by May 1 or December 1 to ensure a place in the College and in the courses selected.

Developmental Studies

As part of Elizabethtown College's efforts to make a college education available to students with diverse talents, the Developmental Studies Program is designed for the motivated student with academic potential, but with less-than-adequate education credentials (SAT scores, high school grades, and/or class rank).

The Developmental Studies Program offers students several thrusts. First, it provides the student with a strong advising support system, through which assistance is readily available on all phases of college life. Second, the students take *Introduction to Liberal Learning**, a course which exposes the student to the great ideas of western thought. Third, the Program director serves as a strong advocate for the serious, motivated student.

For freshmen only, the Developmental Studies Program exists to help the student make the transition from high school to college.

**DS 170 Introduction to Liberal Learning*

3 credits. An introduction to the framework of a liberal arts education. Designed to encourage critical and reflective thinking as well as stronger reading and writing skills. Topics cover the common body of liberal education, embracing the arts and sciences and dealing with their impact on the historical development and current status of ideas. Consists of hour-long lectures by faculty representing the various disciplines, followed by discussions in small seminar settings. Letter graded.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. The College offers study options that allow adult learners to complete B.A. and B.S. degree requirements through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults. Additionally, diploma programs are available for college graduates who want to develop professional competence in careers outside their original college major.

Individuals may also earn Elizabethtown College degrees through study at the University Center in Harrisburg, a consortium of colleges in which Elizabethtown College is a founding member.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisers to develop individualized plans of study leading to associate, bachelor of professional studies, or bachelor of liberal studies degrees. Credit earned through traditional classroom education, special studies, and testing is combined with learning achieved through life and work experience to meet external degree requirements. As a service to adults working in business, industry, and health care, the College also sponsors a number of noncredit seminars and workshops.

Detailed information on continuing education programs at Elizabethtown College is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text, and the reader is there referred to the appropriate department.

Accounting

See Department of Business, page 15.

Anthropology

See Department of Sociology/Anthropology/Social Work, page 53.

Department of Biology

Professors Hoffman (Chair), Dively, Heckman, Pepper
Associate Professors Laughlin, Polanowski

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The curriculum, leading to a Bachelor of Science in Biology, prepares students for the rigors of graduate school and professional schools of medicine, and for biologically-oriented employment opportunities.

The department involves students in research studies with professors through senior seminar and independent study projects.

The Department of Biology offers a choice of four majors leading to a bachelor of science. In addition, the department offers a biology minor and two programs leading to receipt of a degree from cooperating institutions.

The Bachelor of Science: Biology Major prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 412, and 12 additional hours in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 121, 151; and a foreign language through the 112 level or Computer Science 121 and 122.

The Bachelor of Science: Biology Major/Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Biology Major/Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University. The specific requirements are Biology 111, 112, 201, 202, and eight additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 101, 121; and Computer Science 120. In addition, nursing students must take Communications 301 and Physical Therapy students must take English 285B. In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University in Philadelphia. After completing 29 credits at Thomas Jefferson University, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Biology Secondary Education prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the *biology major* (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 215, 215L, 212, 313, 313L, and one course selected from 321 or 324-324L, and nine additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 121, 151; Psychology 105; Education 305, 225d, 225e, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

The Bachelor of Science: General Science Secondary Education Major enables the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Dr. Hoffman.

The Biology Minor provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 or 105-105L; one course from 112, 106-106L, or 108-108L; 212 or 215-215L; one course from 201, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 19 or 20, depending on whether Biology 212 is taken. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in

minor courses. To aid in course selection and career counseling, a co-advisor from the Biology Department should work with the student and the student's major advisor.

The Biology Preforestry Program offers a biology concentration in the five-year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Biology Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University for the junior and senior years. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs.

105 Principles of Biological Science

3 credits. (Core) Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *Corequisite: (to satisfy Core) Biology 105L (may not be taken for credit after completing Biology 111).* Staff.

105L Principles of Biological Science Laboratory

1 credit. (Core) Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106 Genetics, Evolution, and Man

3 credits. (Core) Designed for the nonbiology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. *Corequisite: (to satisfy Core) Biology 106L.* Spring semester. Staff.

106L Genetics, Evolution, and Man Laboratory

1 credit. (Core) A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106.* Spring semester. Staff.

108 Man and His Environment

3 credits. (Core) Designed for the nonbiology major. Discussion of basic principles of environmental interrelationships and a consideration of specific problem areas such as pollution, radiation, and population growth with regard to those principles. *Corequisite: (to satisfy Core) Biology 108L.* Prof. Laughlin.

108L Man and His Environment Laboratory

1 credit. (Core) Includes field trips to water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Prerequisite or corequisite: Biology 108.* Prof. Laughlin.

111 General Biology

4 credits. (Core) The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses beyond Biology 112. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit after completing Biology 105 without permission of instructor.* Staff.

112 General Biology

4 credits. (Core) The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology 111.* Spring semester. Staff.

201 Human Anatomy

4 credits. (Core) A study of human structure at the tissue, organ, and system levels. Particular attention given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology 111, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. (Core) A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology 111, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. (Core) A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

212 Molecular Biology

3 credits. (Core) An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. (Core) A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor.* Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit (Core) Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215.* Fall semester. Prof. Heckman.

222 Immunology

3 credits. (Elective) A basic course in immunology encompassing immunity, serology, immunochemistry and immunobiology. Considered antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prereq-*

visit: Biology 112 or permission of instructor. Spring, alternate years. Prof. Polanowski.

235 General Microbiology

4 credits. (Core) A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 104 or 114, or permission of instructor.* Spring semester. Prof. Pepper

311 Biological Instrumentation and Research Methodology

4 credits. (Core) A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 hours of biology, 8 credit hours of chemistry.* Fall semester. Prof. Pepper.

313 General Ecology

3 credits. (Core) The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor.* Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. (Core) Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313.* Fall semester. Prof. Laughlin.

321 Plant Physiology

4 credits. (Core) A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 104 or 114; or permission of instructor.* Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. (Core) A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. (Core) An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. (Core) A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. (Core) Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. (Core) A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Prof. Dively.

342 Development and Evolution

3 credits. (Core) A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215.* Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. (Core) A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. (Core) A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of instructor.* Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. (Core) A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114.* Offered upon demand. Prof. Pepper.

370-379 Special Topics in Biology

Variable credit. (Core) Courses of a specialized nature reflecting the interests of the instructor. Courses offered on a random basis. Staff.

380-389 Directed Study in Biology Topics

Variable credit. (Core) Directed study in biological areas in which the student meets regularly with the instructor on an individual basis. Laboratory work may include self-directing aids. *Prerequisite: permission of instructor.* Staff.

412 Seminar in Biology

2 credits. (Core) An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311.* Spring semester. Staff.

480-489 Independent Problems in Biology

Variable credit. (Core) Designed to allow the student to do independent research in some phase of biology. *Prerequisites:*

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *corequisite:* Education 225d. Fall, alternate years. Prof. Hoffman.

Department of Business

Professor Buffenmyer

Associate Professors Evans, Gliptis, Hoppie,

C. Kreider, Neyer, Pomroy, Stone (*Chair*), Trostle

Assistant Professors Beyerlein, S. Dolan (*Associate Chair*), Hill, Moyer, Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations and in academic institutions. The department's goal is to offer students a broad understanding of the nature of business and its role in society, and to provide the foundation for graduate study, continuing self-education, and personal development.

The Department of Business offers four majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the General Education Core, and specific mathematics requirements provides this background. A student will gain further understanding of specific areas of business by concentrating in one or more of seven areas: *accounting, business education, computer science/business information systems, economics, finance, management, or marketing.* A student may also select a secondary area of concentration in *communications, international business, or health science.*

Business administration students may also major in forestry and environmental studies. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Science in Business Education. For students who plan to teach in the business department of a secondary school, the business education curriculum provides a liberal training in courses outside the field of business, a broad background in business, depth in at least two certification areas in business, and professional education. The professional training is conducted by personnel who have been secondary business teachers and who maintain an aware-

ness of current developments through close relationships with business departments in area high schools and vocational-technical schools.

Bachelor of Arts or Science in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. The elective courses should be tailored to the student's area of interest, in consultation with the department advisor.

For a minor in Business Administration, a student must complete the following 24 hours of course work: AC 107, Ec 101, BA 265, BA 331, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Accounting

A major in accounting includes Accounting 105, 106 (or 107, 108), 205, 206, 305, 306, 12 additional semester hours in accounting; Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151.

Business Administration

A major in business administration includes Accounting 107, 108, (or 105, 106); Business Administration 215, 248, 265, 325, 330, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration.

For an ***Accounting Concentration***, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A ***Business Education Concentration*** requires keyboarding proficiency, Business Education 305, 421; Education 225d; and the completion of one of four options: accounting, computer science, marketing, or secretarial. A ***Computer Science/Business Information Systems Concentration*** requires Computer Science 121, 135, 335, 340. An ***Economics Concentration*** requires Economics 301, 302, and two other economics courses. A ***Finance Concentration*** requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The ***Management Concentration*** requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A ***Marketing Concentration*** requires Business Administration 311, 498, and two other marketing courses from the departmental advising sheet.

A ***Secondary Concentration in International Business*** requires competency at the 112 level in a modern language, Anthropology 211, Political Science 205, Economics 307, and

two other courses form the departmental advising sheet. A *Secondary Concentration in Health Science* requires four additional courses from biology and/or chemistry according to the departmental advising sheet. A *Secondary Concentration in Communications* requires Business Administration 355, Communications 105, English 185, and two other courses from the departmental advising sheet.

Business Education

A major in business education includes Accounting 105, 106; Business Administration 215, 248, 265, 325, 331, 330 or 332, 355; Business Education, 421; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151; Psychology 105; and the professional education program for secondary certification: Education 415, 225d, 225e; Business Education 305, 473 (Education 305, 473). Each student must choose two or more of the following certification areas: accounting, computer science, marketing, secretarial, office technologies. Speech proficiency is also required.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics; Computer Science 120, Mathematics 121, 131, and 151; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may *not* enroll in Accounting 107 or 108 unless the department specifically allows them to do so. Likewise, students who complete 107 may *not* enroll in 105 or 106. The proper course sequence is either 105-106, or 107-108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite:* Accounting 105. Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Fall semester. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite:* Accounting 107. Spring semester. Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite:* Accounting 106 or permission of instructor. Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite:* Accounting 205. Spring semester. Prof. Neyer.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites:* Accounting 301, 206 or permission of the instructor. Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite:* Accounting 106 or 108; or permission of instructor. Fall semester. Staff.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite:* Accounting 305. Spring semester. Staff.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite:* Accounting 106 or 108. Spring semester. Prof. Neyer.

370-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite:* Accounting 206. Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite:* Accounting 206. Fall semester. Prof. Pomroy.

409 Contemporary Problems for C.P.A.'s

3 credits. The widely varying aspects of public accounting, the latest standards and problems. *Prerequisites:* Accounting 302, 405, 406; or permission of instructor. Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite: approval of the department chair.*

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites: approval of the department chair and the Provost.*

499 Seminar in Accounting

3 credits. A study of selected topics currently under discussion in the accounting field. A major research project is required. Offered upon student demand and faculty availability. *Prerequisite: permission of instructor.* Spring semester.

Business Administration

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. *Prerequisite: or corequisite: Economics 102.* Profs. Buffenmyer, Moyer.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business; includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisites: Mathematics 151, 117.* Profs. Beyerlein, Trostle.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites: Business Administration 215, Mathematics 151.* Fall semester. Prof. Hill

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisite: Business Administration 215 or permission of instructor.* Spring semester. Prof. Moyer.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites: Business Administration 215, 265.* Fall semester. Prof. Moyer

316 Marketing Management

3 credits. The formulation of marketing policies and the planning techniques for embodying these policies in marketing programs. Case analysis is stressed. *Prerequisites:*

Business Administration 215, 248, 265. Spring semester. Prof. Hill.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite: Business Administration 215.* Fall semester. Prof. Hill.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite: Accounting 106 or 108.* Profs. Beyerlein, Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Fall semester. Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Fall/Spring (beginning 1989). Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of instructor.* Spring semester. Prof. Gliptis.

355 Managerial Communications

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Profs. Black, C. Kreider.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites: Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

370-379 Special Problems

3 credits. Topics and problems of current relevance in business.

371 International Business Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite:* BA 265. Prof. Buffenmyer.

375 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during and after a purchase. Emphasis is on understanding and predicting the individual's consumption patterns so that effective marketing strategies can be developed. *Prerequisite:* BA 215. Fall semester. Prof. Moyer.

377 Fundamentals of Materials Management

3 credits. An overview to the field of materials management and physical distribution. Topics covered include all materials management functions; production planning and scheduling, inventory control, market analysis, materials handling, procurement transportation, warehousing and physical distribution. *Prerequisites:* AC 108, EC 102, BA 265, MA 151, or permission of the instructor. Fall semester. Staff.

378 Purchasing Management

3 credits. A basic overview of the purchasing function. Topics covered include organization of purchasing, policies and procedures, sourcing, negotiations, make or buy, legal considerations, quality control, procurement of capital equipment, impact of computerization, and vendor evaluation. *Prerequisites:* BA 377, BA 248, CS 120, BA 331, or permission of the instructor. Spring semester. Staff.

379 Inventory Management and Forecasting

3 credits. A conceptual foundation and understanding of forecasting methodology for the materials function in operations; various inventory management systems, considering the problems of changes and constraints on inventory structures, inventory control procedures, accounting aspects, physical control, and simulation as an inventory modeling tool. *Prerequisites:* BA 378, or permission of the instructor. Staff.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite:* Business Administration 325. Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, reading, and more complex problems are used to illustrate the concepts covered. *Prerequisite:* Business Administration 325. Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites:* Business Administration 248, 369; Economics 102. Spring semester. Prof. Hill.

467 Personnel Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization

of personnel in organizations. *Prerequisite:* Business Administration 265. Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite:* Business Administration 369 or permission of instructor. Fall semester. Prof. Muston.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite:* approval of department chair.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites:* approval of department chair and the Provost.

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisites:* senior status and permission of instructor. Prof. Muston.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites:* Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor. Spring semester. Prof. Hill.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites:* Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of instructor. Profs. Buffenmyer, Muston.

Business Education

101 Elementary Gregg Shorthand

3 credits. Introduction to Gregg Shorthand Series 90; instruction in theory, and in reading and writing shorthand rapidly and accurately. For students with no training in shorthand. Fall semester. Prof. S. Dolan.

111 Document Processing I

3 credits. Fundamental keyboarding and formatting techniques: microcomputer operation, letter forms, tabulation, manuscript form. For students with no formal training on the typewriter, microcomputer, and word processing application. Fall semester. Prof. C. Kreider.

201 Intermediate Gregg Shorthand

3 credits. An intensive study of Gregg Shorthand Series 90; emphasis upon developing the student's ability to take dictation on unfamiliar material rapidly and to transcribe accurately. *Prerequisites:* Business Education 101, 111; or permission of instructor. Spring semester. Prof. S. Dolan.

2II Document Processing II

3 credits. A concentrated training on the microcomputer word processing application and the electronic memory typewriter, with an emphasis on advanced formatting and editing of business letters, special communication forms, executive communications, and application forms. *Prerequisite:* B. Ed. 111 or permission of the instructor. Fall semester. Prof. C. Kreider.

30I Advanced Gregg Shorthand

1 credit. The study of methods and materials used in teaching shorthand in the secondary school. Enrollment limited to business education students. *Prerequisites:* Business Education 201, 211; or permission of instructor. Prof. S. Dolan.

30S Practicum in Secondary Education: Business (Education 305)

4 credits. Instructional methodology of business education and in-school experience integrated under the guidance of a clinical professor representing the academic major. *Prerequisite:* Psychology 105; *corequisite:* Education 225d. Fall, 1988. Profs. S. Dolan, C. Kreider.

3II Advanced Document Processing

1 credit. Methods and materials used in teaching document processing in the secondary school. Enrollment limited to business education and business administration (business education concentration) majors. *Prerequisite:* B. Ed. 211 or permission of the instructor. Prof. C. Kreider.

370-379 Special Problems

3 credits. A directed learning experience designed to allow students to explore current topics of special relevance in the field of business education.

42I Office Practice

1 credit. The study of methods and materials for teaching secretarial procedures and business machines. Enrollment limited to business education and business administration (business education concentration) majors. *Prerequisite:* Business Education 111 or permission of instructor. Fall, 1988. S. Dolan.

473 Professional Internship, Secondary (Education 473)

12 credits. Student teaching in a secondary classroom. *Prerequisite:* Education 305. Profs. S. Dolan, C. Kreider.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business education. *Prerequisites:* approval of department chair and the Provost.

Economics

10I Principles of Economics I

3 credits. (Core) The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. Does not fulfill Core requirement for students majoring in accounting, business administration, or business education. Fall, Spring semesters. Staff.

102 Principles of Economics II

3 credits. (Core) Continuation of 101. Topics include elasticity, consumer behavior, production costs, market structures (competition, oligopoly, monopoly), and resource pricing. Does not fulfill Core requirement for students majoring in accounting, business administration, or business education. *Prerequisite:* Economics 101 or permission of instructor. Fall, Spring semesters. Profs. Evans, Hoppie.

30I Intermediate Microeconomic Theory

3 credits. (Core) An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites:* Economics 101, 102; Mathematics 121 or 117. Fall semester 1988. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. (Core) Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites:* Economics 101, 102; Mathematics 121 or 117. Spring 1988.

303 Money and Banking

3 credits. (Core) A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisites:* Economics 101, 102; or permission of instructor. Spring semester. Prof. Evans.

304 Public Finance

3 credits. (Core) An application of macroeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisites:* Economics 102. Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. (Core) The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Spring semester 1988. Prof. Hoppie.

307 International Economics

3 credits. (Core) The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite:* Economics 101 or permission of instructor. Fall semester, 1988. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. (Core) Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite:* Economics 101 or permission of instructor. Fall semester. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. (Core) An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites:* Economics 101, 102; Mathematics 121 or 117. Fall semester 1987. Alternate years. Prof. Evans.

370-379 Special Problems

3 credits. (Core) Topics and problems of current relevance in economics.

372 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Fall semester. Prof. Hoppie.

480-489 Independent Study

Variable credit. (Core) Independent study and research on a problem or topic in the field of economics. *Prerequisites:* approval of department chair and the Provost.

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite:* permission of instructor. Fall semester 1987. Alternate years. Prof. Gliptis.

Business Administration

See Department of Business, page 17.

Business Education

See Department of Business, page 18.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology*), Ranck, Spangler
Associate Professors Reeder (*Chair*), Schaeffer

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their General Education Core requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to

graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations; and minors in chemistry and biochemistry.

The Bachelor of Science in Biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Pre-medical and other health professions programs are discussed on p. 57.

The Bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum; the medical technology curriculum; and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is awarded upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of the College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, New Jersey), York Hospital, Lancaster General Hospital, St. Joseph Hospital (Lancaster), Abington Hospital (Abington, Pennsylvania) and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's adviser and the department chair. Students planning much work in chemistry should consult with a departmental adviser as early as possible to plan the sequence of courses in chemistry, mathematics, physics, biology, and modern foreign language which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to insure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-2, 461-2, 490 or 496 or 451, 491 or 497; Biology 111, 112, 324, 324L; 9 semester hours of additional biology and/or chemistry, 6 of which must be in biology; Computer Science 115; Mathematics 122; Physics 102; and Modern Language*.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 346, 343, 344, 352, 361-2, 402, 421, 451, 461-2, 490 or 496, 491 or 497; Computer Science 115; Mathematics 222; Physics 102; and Modern Language*.

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; 16 semester hours of biology which must include Biology 111, 112, 222, and 235; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus General Education Core and electives must total 100 semester hours. The clinical year includes a minimum of 28 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, 490 or 496 or 451, 491 or 497; Mathematics 122; Physics 102; two additional courses in biology or chemistry; Modern Language*.

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Psychology 105; and Education 305, 225d, 415, 225e, and 473. The department also participates in the general science certification program. For a detailed listing, see p. 60.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 346, 352, 361-2, 461-2, 490 or 496 or 451; Computer Science 115; Mathematics 222; Physics 202, 203; Modern Language*; and a minimum of seven semester hours from the following courses: Chemistry 402, 421, 491 or 497; Mathematics 362; Physics 404, 407, 408, 490.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of chemistry.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

*A modern language is defined as one taught by the Department of Modern Language at Elizabethtown College or specifically approved by the Department of Chemistry. A chemistry or biochemistry student may fulfill the Department language requirement in any one of the following ways:

- 1) Proving competence in a modern language at the 112 level by examination.
- 2) Satisfactory completion of a 112-level modern language course.
- 3) Satisfactory study of a second modern language, not previously studied by the student, as determined for each individual by the department faculty.

101 General Chemistry I

4 credits. (Core). A general survey for students requiring only one year of chemistry. Topics include stoichiometry, atomic structure, bonding and geometry, states of matter, reactions, and solutions. Hours: lecture 3, laboratory 3. Fall semester. Profs. Reeder, Schaeffer.

104 General Chemistry II

4 credits. (Core). A continuation of Chemistry 101. Topics include colligative properties, thermodynamics, kinetics, equilibria, electrochemistry, and introductory organic and biochemistry. Hours: lecture 3, laboratory 3. *Prerequisite:* Chemistry 101. Spring semester. Prof. Reeder.

113 Organic Chemistry I

4 credits. (Core) The introductory course for those students who require more than one year of chemistry. A study of stoichiometry, bonding, geometry, equilibrium, kinetics, and instrumentation applied to carbon compounds. Hours: lecture 3, laboratory 3. *Prerequisites:* high school chemistry and algebra or equivalent. (Only 2 credits are awarded for Chemistry 113 for those students who have satisfactorily completed Chemistry 104.) Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. (Core) A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite:* Chemistry 113. Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or corequisite:* Chemistry 114; permission of instructor. Spring semester. Prof. Proctor.

213 Analytical Chemistry I

4 credits. (Core) Quantitative analysis integrating classical and instrumental methods. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 114. Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. (Core) A continuation of Chemistry 213, with added emphasis on instrumental methods and computer systems interfacing. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 213. Spring semester. Prof. Hedrick.

242 Chemical Equilibrium and Kinetics

3 credits. (Core) Thermodynamics as applied to chemical equilibria in ideal and nonideal, homogeneous, and heterogeneous systems. Kinetics, ionic solutions, and electrochemistry are also treated. *Prerequisites or corequisites:* Chemistry 214, Mathematics 122, Physics 204 or 231. Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. (Core) The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites:* Chemistry 213 and Biology 112 or its equivalent. Fall semester. Prof. Spangler.

324 Biochemistry II

3 credits. (Core) A continuation of Chemistry 323. *Prerequisite:* Chemistry 323. Spring semester. Prof. Spangler.

326 Techniques of Biochemistry I

1 credit. (Core) Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite:* Chemistry 323. Fall semester. Prof. Spangler.

327 Techniques of Biochemistry II

1 credit. (Core) A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite:* Chemistry 326; *corequisite:* Chemistry 324. Spring semester. Prof. Spangler.

343 Atomic Structure

(Physics 343)

3 credits. (Core) The history and principles of quantum theory, radiation, atomic spectra, and the extranuclear structure of the atom. *Prerequisite:* Chemistry 242. Fall semester. Prof. Ranck.

346 Atomic Structure Laboratory

(Physics 221L)

1 credit. (Core) (Description, see Physics 221). *Pre- or co-requisite:* Chemistry 343. Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. (Core) An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite:* Chemistry 343. Spring semester. Prof. Ranck.

352 Advanced Chemistry Laboratory I

3 credits. (Core) Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite:* Chemistry 344. Spring semester. Prof. Ranck.

451 Advanced Chemistry Laboratory II

4 credits. (Core) Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite:* Chemistry 242. Fall semester. Prof. Schaeffer.

361,-2 Chemistry Seminar I, II

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. Hours: seminar 1, laboratory 2 (Fall). Seminar 1, Spring semester. Fall, spring semester. Prof. Schaeffer.

461,-2 Chemistry Seminar III, IV

2 credits. A two-semester sequence in which the student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 364. Hours: seminar 1. Fall, spring semester. Prof. Schaeffer.

370-379 Special Topics in Chemistry

Variable credit. (Core) Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites:* permission of instructor and department chair. Staff.

402 Advanced Inorganic Chemistry

3 credits. (Core) A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite:* Chemistry 344. Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. (Core) A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite:*

Chemistry 344. Fall semester. Prof. Spangler.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control.

Clinical Chemistry—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

490-495 Research in Chemistry

Variable credit. (Core) An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* permission of instructor. Staff.

496-499 Independent Problems in Chemistry

Variable credit. (Core) An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* Permission of instructor. Staff.

Education 305 Practicum in Secondary Education: Science

3 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *corequisite:* Education 225d.

Department of Communications

Professor Riley

Associate Professors Moore (*Chair*), Smith
Assistant Professors Wennberg, Hudson.

Bachelor of Arts

The Department offers a comprehensive preparation

in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the local access cable television production facility, ECTV, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Women in Communications, Society for Collegiate Journalists, International Association of Business Communicators (Elizabethtown College Chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 48 credit hours required for a Bachelor of Arts degree with a *communications major* include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 215, 225, 235, 248, 485; Computer Science 120 or 121 (Computer Science 121 is required before further computer science courses can be taken); one English Professional Writing Course; and 15 credit hours in a concentration.

Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of career interest.

Prior to preregistration for the junior year the student must elect a communications concentration which requires 15 credit hours. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student to design, produce, and manage a variety of internal/external communications functions for business, industry, and other institutions. The student is required to choose two courses from the Business Department: 215, 265, or 312. Also required is one upper division communications elective and two approved electives to be chosen from one or two of the following departments: Business, Communications, Computer Science, English, Political Science, and Psychology.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are either Communications 301 or 304, Com-

munications 401 and 412, and two approved electives to be chosen from one or two of the following departments: Business, Communications, Computer Science, English, Political Science, and Psychology.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcasting and journalism. Required are Communications 311 and either 314 or 316, one upper division Communications elective, and two approved electives to be chosen from one or two of the following departments: Business, Communications, Computer Science, English, Political Science, and Psychology.

A major is permitted to count no more than 57 credits in communications toward graduation requirements. Students may not count a course towards major requirements and those of the Core. One course may fulfill only one requirement.

Admission Requirements for Communications Majors

All students accepted into the communications major must demonstrate competency in writing and keyboarding. Writing competencies are determined by the Department of English. Students performing below an acceptable level are placed in writing courses designed to improve skills. Individuals who have not earned a C or better in a high school or equivalent typing course are placed by the department in an elementary typing, keyboarding, or word processing course. Successful mastery of these competencies is required for a student to continue in the program.

Internships and Practicums

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practicums often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practicums are not repeatable. They may count as an elective within the major. Internship credit counts only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 100 opportunities already negotiated with regional communications organizations.

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used heavily in several courses. Educational discounts may be available if the computer is purchased through the college. The computer is needed first in the computer science course or Com. 215.

105 Basic Speech

3 credits. Basic instruction in developing poise and confidence in speaking. Emphasis is placed on verbal and nonverbal communication, research, outlining, speech preparation, use of visual aids, and the rudiments of group dynamics and discussion. Prof. Riley.

109 Human Communication

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on communication on an individual and interpersonal level, examining such aspects as speech production, sender/receiver relationships, listening, nonverbal communication and the use of symbols. The use of communication in groups and discussion techniques is examined. Students explore forms of public address and mass media from a human communication perspective. Prof. Riley.

115 History and Theory of Communication

3 credits. Communication theory—its history, scope, application, and research methods employed. Significant individuals and events in the history and development of the field of mass communication are studied, as well as various mediums of communication. Prof. Moore.

125 Basic Production

3 credits. The design, theory, and development of production skills in a variety of audio visual materials, photography, and entry-level graphics. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials. A 35mm single lens reflex camera and electronic flash are necessary to complete the required projects. Students are required to purchase various production materials for the course. Prof. Wennberg.

205 Applied Communications

No credit. Four semesters of participation in approved cocurricular activities are required of all majors. All participation must meet standards of each activity in order to count in meeting the requirement. Of the four semesters, three must be in different approved activities which include: a. WWEC-FM, b. Forensics, c. *Etownian* and *Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any activity or activities. Enrollment open only to communications majors or minors. A student is to enroll in no more than one 205 course per semester. Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisite: Communications 105 or 109.* Offered each semester. Staff.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted

methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of computer graphics are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 or 121. (Prerequisites for Professional Writing students: English 185 and one Professional Writing course at or above the 200 level.)* Staff.

225 Audio Production

3 credits. The form and methods of elementary audio production are explored. In addition to theory and the development of basic skills, a student becomes knowledgeable in basic script writing. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video Production

3 credits. The use of video production equipment, including cameras, recorders, lighting, audio, switching, editing, and graphic techniques. Basic script writing and production planning skills are developed. Students are required to purchase production materials. *Prerequisites: Communications 125 and 225.* Prof. Hudson.

248 Communication Law and Issues

3 credits. Communication law and relevant issues within the field of communications. The history and effects of law, as well as past and current issues affecting the media. Students explore relevant case studies and evaluate their impact and possible future trends. *Prerequisite: Communications 115 or permission of instructor.* Offered each semester. Staff.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. *Prerequisite: Communications 105 or 109 or permission of instructor.* Fall semester. Prof. Riley.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. *Prerequisite: Communications 105 or 109 or permission of instructor.* Spring semester. Prof. Riley.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. Fall semester. Staff.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: Communications 311 or permission of instructor. (Professional Writing students: two Professional Writing courses and permission of the instructor.)* Spring semester, odd years. Staff.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, and editing copy, continuity, and news for radio and television. *Prerequisite:* Communications 225, 235, or permission of instructor. Spring semester. Prof. Smith.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites:* Communications 125, 225, and 235. Fall semester, even years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites:* Communications 125, 225, and 235. 205D (ECTV) may be corequisite. Spring semester. Prof. Hudson.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisite:* Communications 125, 215, 225, or permission of instructor. Fall semester, odd years. Prof. Wennberg.

370–379 Special Problems

Variable credit. Periodic offering of the Department or directed study in topics of special interest to advanced majors. Staff.

401 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite:* English Professional Writing Course or permission of instructor. Fall semester. Prof. Anthony.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. *Prerequisites:* Communications 125, 225, and 235, or permission of instructor. Fall semester, even years. Prof. Moore.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession.

Case studies include organizations in business and industry, associations and agencies; government, and education. *Prerequisite:* Communications 401. Spring semester. Prof. Anthony.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisite:* Communications 235, 248. Fall semester, odd years. Prof. Hudson.

470–479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professional in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisite:* Practicum—junior; campus-based sponsor; elective credit in the major; may not be repeated. Internship—senior standing, 2.70 GPA/3.0 in the major; full-time for an entire semester off campus; general (free) elective credit only. Prof. Moore.

480–489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites:* junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee. Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite:* senior standing. Prof. Moore.

Department of Computer Science

Associate Professors C. Krieder, Leap, Zugarek (*Chair*)
Assistant Professors Painter, Tulley
Instructor Chiang.

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to

become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *two majors*—one in *computer science*, and the other in *computer science/business information systems*. Both provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 11/750 is used primarily for administrative purposes. The VAX 11/780, is dedicated to academic use.

The College also has a variety of micro and personal computers available. These include Apple, IBM, Zenith, and DEC personal computers. Interconnection between the computers is provided.

Major software systems available on the computers include most major computer languages (BASIC, Pascal, C, COBOL, FORTRAN, Modula and a Assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, PLOT-10, Dbase III+, Lotus 1-2-3, and Mass-11); both CODASYL network type and relational data base management systems; and a screen forms management system. The College has several word processing packages in use.

All computer science majors and students enrolled in courses requiring use of the computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses, including Computer Science 121, 122, 221, 222, 332, 341, and 490.

The computer science major is further required to take Computer Science 321, 322, and either 421 or 422, plus nine credits of computer science electives; Mathematics 121, 122, 151, 201, and one course chosen from 131, 222, 252; and an area elective which consists of four courses in one area other than computer science. Area elective courses may not be chosen from among those required for or elected to meet Core or international studies requirements and must be approved by the computer science faculty advisor.

The computer science/business information systems major is further required to take Computer Science 135, 335, 409, and nine credits of computer science electives; Mathematics 117, 151, and 131; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of the FORTRAN language, data representation, file handling, and the use of subprograms. (Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor). Staff.

120 Introduction to Computer Processing

3 credits. An overview of computer concepts, uses, and issues. Software packages and computer applications (database, spreadsheet, and word processing) are a major component; elementary programming techniques are taught using a suitable high-level programming language. (This course does not count towards a computer science major or minor.) Staff.

121 Computer Science I

1 or 3 credits. The introductory concepts of computer organization, data representation, algorithmic development and structured programming. Operating systems and I/O devices are covered as they relate to the user. The student is expected to master the fundamentals of a high-level programming language. *Prerequisites: high school algebra and trigonometry.* (Students who have successfully completed Computer Science 115 will receive one credit for the course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis, recursion, internal sort/search methods, string processing, simple data structures and file processing. Assembly language concepts and internal operations of the C.P.U. are introduced. *Prerequisite: Computer Science 121.* Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Staff.

221 Algorithms and Data Structures

3 credits. Methods for structuring data and the algorithms for handling them are developed. Topics include abstract data types, including stacks, queues, linked lists, trees, and storage allocation and management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. *Prerequisite: Mathematics 151.* Fall semester.

322 Formal Languages

3 credits. The theoretical and practical analysis of the syntax of programming languages. Topics include the concepts and terminology associated with grammars, finite state machines, and parsing by recursive descent. *Prerequisites:* Computer Science 221, 321. Spring semester. Prof. Tulley.

332 Computer Organization

3 credits. Introduction to Boolean algebra, logic circuit and design, and their use in computer architecture. Basic parts of computer systems are studied, including storage, control, and input/output systems. *Prerequisite:* Computer Science 222. Fall semester. Staff.

333 Computer Systems Interfacing (Chemistry 333, Physics 333)

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. Staff.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite:* Computer Science 135. Staff.

340 Business Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, and information; systems design; and an investigation of information systems of the various functional areas within the organization. *Prerequisites:* Computer Science 120 or 121; Business Administration 215, 265. Spring semester. Prof. Painter.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisites:* Computer Science 121 and either 122 or 135. Fall semester. Prof. Painter.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites:* Computer Science 221; Mathematics 151; or permission of instructor. Fall, alternate years. Prof. Tulley.

361 Computer Graphics

3 credits. Introductory concepts of computer graphics, including hardware, software, data storage and man/machine interaction. The student is expected to become conversant with computer graphics hardware and be able to create software to provide the interactive generation of graphical output. *Prerequisites:* Computer Science 221 and either Mathematics 172 or Mathematics 201. Fall semester. Prof. Zugarek.

370-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite:* permission of instructor. Staff.

409 Data Base and Information Systems

3 credits. A study of information systems design and data base management techniques. Topics include information retrieval theory, data base design, data models, maintenance, file security, data reliability, CODASYL recommendations on DBMS. *Prerequisites:* Computer Science 335 and either Computer Science 221 or permission of instructor. Spring semester. Prof. Zugarek.

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites:* Computer Science 222, and either Computer Science 322 or permission of instructor. Fall semester. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites:* Computer Science 332. Spring, alternate years. Prof. Leap.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite:* approval of computer science faculty. Prof. Zugarek.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite:* approval of computer science faculty and Dean of the Faculty. Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal and a final report and defense of work. *Prerequisites:* junior or senior status and permission of instructor. Staff.

Earth Science

See Department of Physics and Earth Science, page 48.

Department of Education

Professors Rice, Ziegler (*Chair*)
Associate Professors Bowers, Callenbach, Fox
Assistant Professor Benelli

Bachelor of Science

The department offers three major certification programs—Early Childhood (N-3), Elementary (K-6), and Secondary (7-12)—combining a strong liberal arts education with the development of high professional competence. Complementing the General Education Core and, in secondary certification, the student's academic major, the certification programs bring together in a creative way the student, the school, and the subject to be taught. The department further stresses the importance of supervised field experiences which complement on-campus courses in education.

Admission to Teacher Education Program

All applicants who plan to teach must, by the time they have completed Education 235 or 305, file a written application for admission to the Teacher Education Program and meet the qualifying criteria of the Department of Education: proficiency in English and speech, good physical and mental health, a grade point average of at least 2.0, approval of the Office of Student Affairs, satisfactory evaluation and recommendation by the members of the Department of Education and approval by the major department of prospective secondary school majors.

Note: Students who fail to meet these criteria as applicants, or who later fail to maintain satisfactory progress, are counseled out of the program and directed into other areas of endeavor.

Progress Toward Program Completion

1. Students are evaluated at the conclusion of each semester after admission into the program, and may be advised to withdraw at any time the department determines that withdrawal is in the best interests of the College, the program, and the student.
2. Any grade below C in the teaching major after completion of the 100-level courses will disqualify a student from certification.
3. Students should apply for certification during the semester in which they will graduate. Should they apply after they have graduated, they must satisfactorily complete whatever additional requirements are then in effect before they can receive certification.

Certification Program Requirements

The Secondary Certification Program (accompanied by the bachelor of arts or bachelor of science degree, depending on the student's academic major):

- A. General Education Core as specified by the College.
- B. Academic major as outlined by each program area which supports a certification program: Business Ed., English, Mathematics, Science (Biology, Chemistry, Physics, and General Science), Social Studies.

- C. Professional education requirements: Education 305, 225d, 415, 225e, 473.
- D. Satisfactory completion of the Pennsylvania Teacher Certification Testing program (beginning June 1, 1987).

The Elementary Education Major (bachelor of science degree):

- A. General Education Core as specified by the College. Psychology 105 must be taken as part of the social science Core requirement.
- B. Professional education requirements: Education 205, 225a-c, 235, 255, 325, 335, 355, 356, 365, 472, 490-498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305.
- C. Electives
- D. Satisfactory completion of the Pennsylvania Teacher Certification Testing program (beginning June 1, 1987).

The Early Childhood Education Major (bachelor of science degree):

- A. General Education Core as detailed by the College. Psychology 105 must be selected as part of the social science Core requirement.
- B. Professional education requirements: Education 205, 225a-c, 235, 255, 315, 320, 325, 335, 355, 365, 471, 490-498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305.
- C. Electives

205 Foundations of Education

4 credits. A study of some of the historical, philosophical, sociological, and psychological foundations of education.

Prerequisite: Psychology 105. Prof. Fox.

Note: Admission to the Teacher Education Program is a prerequisite to any other education course. Prof. Benelli and Prof. Rice.

225 a-e Education Practicum

Variable credit. Provides instruction in media and experience in the preschool, elementary, or secondary classroom. The practicum and its corequisite courses integrate classroom experience with on-campus study. Prof. Benelli and Prof. Bowers.

235 Fundamentals of Reading Instruction

3 credits. The systematic assessment and teaching of the basic reading skills: word recognition, word analysis, and comprehension skills. *Prerequisite:* Education 205; *corequisite:* Education 225b, Education 255. Prof. Callenbach.

255 Children's Literature

3 credits. A study of representative works from the field of children's literature. (*Corequisite:* Education 225B and Education 235.) Prof. Rice.

305 Practicum in Secondary Education

4 credits. The instructional methodology of an academic discipline is integrated with in-school experience under the guidance of a clinical professor in the academic major: biology, chemistry, physics, general science, or social studies. *Prerequisite:* Psychology 105; *corequisite:* Education 225d. Secondary Clinical Professors.

310 History of Science

1 credit. A study of developments in science from the ancient Greeks to the twentieth century. *Prerequisite:* permission of instructor. Prof. Hoffman.

315 Early Childhood Education

4 credits. A study of programs from preschool through grade three, emphasizing the setting, the child, and the special needs and approaches of early childhood education. On-campus study is coordinated with the experiences of observing and participating in early childhood settings. *Prerequisites:* Education 225a, Education 235, Education 255. Fall semester. Prof. Benelli.

320 Special Methods in Early Childhood Education

4 credits. Integrates early childhood materials and methods into the framework of the preoperational child. *Prerequisite:* Education 315; *corequisites:* Education 325, 335, 355, 365. Spring semester. Prof. Benelli.

325 Science for Early Childhood/ Science for Elementary Education

3 and 3 credits, respectively. A study of science concepts, procedures, and materials for the preschool and elementary child. *Prerequisite:* Education 315 (early childhood); 235 (elementary); *corequisite:* Education 225C. Prof. Ziegler.

335 Mathematics for Early Childhood/ Mathematics for Elementary Education

3 and 3 credits, respectively. A study of mathematics concepts, procedures, and materials for the preschool and elementary child. *Prerequisite:* Education 315 (early childhood); 235 (elementary); *corequisite:* Education 225C. Prof. Ziegler.

355 Language Arts and Communication for Elementary Education

3 credits. A study of concepts, procedures and materials for language arts, including listening and writing for the elementary child. *Prerequisite:* 235; *Corequisite* 225-C. Prof. Rice.

356 Language Arts and Reading for Early Childhood/ for Elementary Education

3 and 3 credits. A study of concepts, procedures, and materials for language arts and reading for the elementary child. *Prerequisite* 235, *Corequisite* 225-C. Prof. Callenbach.

365 Social Studies for Early Childhood/ Social Studies for Elementary Education

3 and 4 credits, respectively. A study of social studies concepts, procedures, and materials for the preschool and elementary child. *Prerequisite:* Education 315 (early childhood); 235 (elementary); *corequisite:* Education 225C. Prof. Fox.

371-380 Special Problems in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite:* permission of instructor.

415 Topics in Secondary Education

4 credits. Theory and practice of secondary education. Includes study of human development, interrelationships of individuals and groups, and other topics selected in response to standards for certification and other needs of the prospective secondary education teacher. *Prerequisite:* Education 305; *corequisite:* Education 225e. Profs. Fox and Callenbach.

471 Professional Internship, Early Childhood

16 credits. Student teaching in an early childhood classroom. *Prerequisites:* Education 320, 325, 335, 355, 365. Staff.

472 Professional Internship, Elementary Education

16 credits. Student teaching in an elementary classroom. *Prerequisites:* Education 325, 335, 355, 356, 365. Staff.

473 Professional Internship, Secondary

12 credits. Student teaching in a secondary classroom. *Prerequisite:* Education 305; *corequisite:* Education 415. Staff.

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

490-498 Special Topics

Variable credit. Courses designed to give students opportunity to pursue work in an area of major interest in such topics as art in the elementary school, creativity, computers in education, children's literature, developmental reading.

Department of English

Professors Campbell, Dwyer
Associate Professors Black, Rohrkemper, Russell
(Chair), Sarracino, Watson
Assistant Professor Huber.

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary studies is the fundamental aim of the General Education courses and of the rigorous and comprehensive concentrations which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The English major requires 42 hours, including the 6 hours specified as literature area Core.

The literature concentration requires English 105, 301, 363, 394; one course in literary forms (all English courses with middle digit 1); three courses in literary movements (all English courses with middle digit 2); one course in individual authors (all English courses with middle digit 3); two courses in American Literature (all English courses with middle digit 4); and an additional 9 hours of electives in English (excluding English 101 and 102).

The professional writing concentration requires English 105, 185, 301, 393; Communications 215; Computer Science 120; one English course with middle digit 1; two English courses with middle digit 2; one English course with middle digit 3; one English course with middle digit 4; and 12 hours in writing electives to be selected from English and Communication writing courses: English courses with middle digit 8 (no more than two courses from English 285A/B/C/D) and Communications 311, 314 (no more than one course and not necessarily either).

The *secondary education concentration* requires English 102, 105, 185, 301, 306; one English course with middle digit 1; one English course with middle digit 2; one English course with middle digit 3; two English courses with middle digit 4; one English course from 381, 382, 383; an additional 9 hours of electives in English (excluding English 101); Psychology 105; and Education 305, 225d, 415, 225e, 473.

The Department of English offers a *minor* consisting of 24 hours (including 6 in literature from the Core) and distributed as follows: English 105, 185; one course with the middle digit 1, one course with the middle digit 2, one course with the middle digit 3, and one course with the middle digit 4; and two courses from the remainder of the Department's offerings (excluding English 101, 102, 306). Students must apply for acceptance to the minor no later than the beginning of their junior year (at the completion of 60 credits).

101 Basic Writing (Developmental Studies 101)

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. No credit granted if taken after successful completion of English 102. Staff.

102 Expository Writing

3 credits. A course allowing students to experience writing as a dynamic, complex process involving recursive stages of probing a subject, generating ideas, planning, redrafting, and editing. Staff.

105 Introduction to Literature

3 credits. (Core) A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature, and to provide the necessary background for upper-level literature courses. Readings are drawn from major authors such as Homer and Shakespeare. Prerequisite to all literature courses. Prerequisite: English 102 or exemption from it. Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. Prerequisite: permission of the instructor. Profs. Rohrkemper, Watson.

285A/B/C/D Writing in the Professions

3 credits each. A study of the range of materials typically produced in specific professional areas so that students gain a sense of the constraints that govern their style:

285A Writing for Science and Technology

285B Writing in the Health Professions

285C Writing in the Social Sciences

285D Writing for Government and the Judicial Systems

Profs. Huber and Watson.

301 History of the English Language

3 credits. A combination of a history of language and an introduction to linguistics related to literature, stylistics, and composing. Staff.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through

teaching internships in the classroom and the Learning Center. Prerequisite to professional semester. Prof. Black.

311 Autobiography

3 credits. A critical study of this literary form of non-fiction writing and instruction in writing autobiographically or for professional writing majors may fulfill either literature or upper-level writing requirement. Prerequisite: English 105. Profs. Huber and Watson.

312 English Drama Before 1900

3 credits. (Core) A study of representative English plays, excluding Shakespeare, from the Middle Ages to the twentieth century, emphasizing Elizabethan and Jacobean drama. Prerequisite: English 105. Alternate years. Prof. Campbell.

313 Modern Drama

3 credits. (Core) A study of drama from the realism of Ibsen through naturalism, expressionism, and symbolism to the current avant garde theatre. Prerequisite: English 105. Alternate years. Prof. Campbell.

314 The English Novel Before 1900

3 credits. (Core) A study of selected masterpieces from Defoe to Hardy as works of prose art and as turning points in the development of the form. Prerequisite: English 105. Alternate years. Prof. Campbell.

317 Modern Novel

3 credits. (Core) A study of the work of major novelists of the twentieth century with emphasis upon the development of the novel as an art form. Prerequisite: English 105. Alternate years. Prof. Rohrkemper.

318 Modern Poetry

3 credits. (Core) A study of at least three major twentieth-century poets as well as selections from writers who have published within the last thirty years. Prerequisite: English 105. Alternate years. Prof. Dwyer.

320 Concepts of the Renaissance

3 credits. (Core) A study of the "ruling ideas" of the Renaissance in Britain; representative nondramatic writers with an emphasis on Spenser. Prerequisite: English 105. Alternate years. Prof. Russell.

322 The Seventeenth Century

3 credits. (Core) A study of the major nondramatic writers, excluding Milton, from 1600 to 1660: among them, Donne, Jonson, Herbert, and selected prose writers. Prerequisite: English 105. Alternate years. Prof. Russell.

323 The Restoration and Eighteenth Century

3 credits. (Core) A study of poetry and prose from 1660 to 1800, with an emphasis on Dryden, Swift, Pope, Sterne, and Johnson. Prerequisite: English 105. Alternate years. Prof. Dwyer.

327 The Romantic Movement

3 credits. (Core) A study of selected poetry and prose most significantly embodying the central concepts and achievements of English Romanticism. Prerequisite: English 105. Alternate years. Prof. Dwyer.

328 The Victorian Period

3 credits. (Core) A study of selected poetry and prose from Tennyson to Hardy, particularly emphasizing the changing response of the artist to the conflicts stemming from the industrialization of the period. *Prerequisite: English 105.* Alternate years. Prof. Sarracino.

329 Modern British Literature

3 credits. (Core) A study of poetry and prose from the end of the nineteenth century to the middle of the twentieth, with an emphasis on the development of a modern aesthetic in the works of such writers as Conrad, Yeats, Joyce, Lawrence, Woolf, and Auden. *Prerequisite: English 105.* Alternate years. Prof. Rohrkemper.

331 Chaucer

3 credits. (Core) A study of representative works of Chaucer. *Prerequisite: English 105.* Alternate years. Prof. Russell.

332 Shakespeare

3 credits. (Core) A study of representative works of Shakespeare. *Prerequisite: English 105.* Prof. Campbell.

333 Milton

3 credits. (Core) A study of representative works of Milton. *Prerequisite: English 105.* Alternate years. Prof. Russell.

337 Eighteenth-Century English Authors

3 credits. (Core) A study of representative works of one or two major authors such as Pope, Swift, Fielding, and Goldsmith. *Prerequisite: English 105.* Alternate years. Prof. Dwyer.

338 Nineteenth-Century English Authors

3 credits. (Core) A study of representative works of one or two major authors such as Blake, Keats, Dickens, and Hardy. *Prerequisite: English 105.* Alternate years. Prof. Campbell.

340 The American Romantic Movement

3 credits. (Core) A study of American Transcendentalism, including its sources, and of major figures of the period such as Hawthorne, Melville, Whitman, Emerson, and Thoreau. *Prerequisite: English 105.* Fall, alternate years. Prof. Sarracino.

341 The Rise of Realism in American Literature

3 credits. (Core) A study of American literature in the late nineteenth and early twentieth centuries, with emphasis on such writers as Dickinson, Clemens, Robinson, Frost, Dreiser, and Fitzgerald. *Prerequisite: English 105.* Alternate years. Prof. Sarracino.

342 Experimentalism in American Literature

3 credits. (Core) A survey of major American writers of the twentieth century, authors such as Pound, Eliot, Faulkner, Williams, Stevens, Stein, and Hemingway. *Prerequisite: English 105.* Alternate years. Prof. Rohrkemper.

343 American Authors

3 credits. (Core) A study of the writings of one or two American authors such as Melville, James, Whitman, and Faulkner. *Prerequisite: English 105.* Alternate years. Profs. Rohrkemper and Sarracino.

351 Analysis of Poems

3 credits. (Core) Intensive training in reading the individual poem accurately and sensitively. *Prerequisite: English 105.* Alternate years. Prof. Russell.

352 The Fantastic in Literature

3 credits. (Core) A study of major works of fantasy (*Alice in Wonderland*, *The Hobbit*, *The Golden Key*, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic." *Prerequisite: English 105.* Alternate years. Prof. Sarracino.

357 Women and Literature

3 credits. (Core) A study of the effects on women writers and readers of a male dominated literary tradition. *Prerequisite: English 105.* Alternate years. Profs. Huber and Russell.

363 Literary History of Great Britain

3 credits. A study complementing the period-course requirement for literature-concentration students and conveying the relationships of historical literary movements. *Prerequisite: three upper level courses in literature.* Alternate years. Prof. Russell.

370-379 Special Problems

3 credits. Courses involving specific subjects chosen in response to student/faculty interest. *Prerequisite: English 105.* Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry and prose, or both. Graded pass/no pass. *Prerequisite: permission of instructor.* Profs. Sarracino and Watson.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentations of technical information. *Prerequisite: permission of instructor.* Prof. Watson.

383 Managerial Communication

3 credits. A course emphasizing the concerns of administrative writers and including instruction in oral and graphic communication of business information. *Prerequisite: permission of instructor.* Prof. Black.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course instructing students in advanced writing and involving them in service in the Writing Service as responsive readers of other students' prose. *Prerequisite: English 185.* Fall semester. Prof. Huber.

385 Writing for Publication

3 credits. Advanced study of copy editing and of techniques for promoting one's own manuscripts. Prof. Huber.

393 Senior Writing Seminar

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisite: Professional Writing Concentration or permission of instructor.* Alternate years. Prof. Huber.

394 Senior Seminar in Literary Criticism

3 credits. A seminar for literature majors on the history of literary criticism, including research techniques. *Prerequisites:* English 105; permission of instructor for nonmajors. Alternate years. Prof. Dwyer.

470-479 Internships

1-3 credits. One- or two-credit internships may be requested in either a student's junior or senior year in an on- or near-campus assignment. Three-credit internships are for students proven competent in one- or two-credit internships or judged as having special aptitudes for the specific internship. See the Department Chair for information. Prof. Huber.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education: English

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite:* Psychology 105; *corequisite:* Education 225d. Prof. Black.

Department of Fine and Performing Arts

Professors Harrison, Kitchen, Libhart, Shull (*Chair*)
Associate Professors Douglas, Simmers, Stites
Assistant Professor Shinn
Instructor Friedly

Bachelor of Arts; Bachelor of Science

Art

The academic and the practical courses in the art program are offered to help students refine their creative potential and expand their judgment of the visual arts. Studio courses in two-dimensional media are offered. For a student to enroll in a studio course, permission of the Registrar is required.

105 Drawing

3 credits. (Core) Studio practice in basic drawing media for sketching and rendering both live and inanimate subjects.

211 Painting

3 credits. (Core) Studio easel painting in opaque media

with stress on pictorial organization and application of color theories.

251 Printmaking

3 credits. (Core) Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery.

324 American Arts and Crafts

3 credits. (Core) Comprehensive scan of U.S. arts, observing their derivation from social, ethnic, and aesthetic influences.

355 Introduction to Art

3 credits. (Core) Experience with selected works by major and minor artists of the modern epoch, as a means of recognizing and evaluating artistic style.

371-380 Seminars in Fine Arts

Variable credit. (Core) Offered as interest justifies.

Dance

DA 101 Interpretive Movement (Same as Physical Education 290)

1 credit. Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Prof. Williams.

DA 102 Introduction to Ballet (Same as Physical Education 295)

1 credit. Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Prof. Williams.

Music

The music programs are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

The department offers three majors leading to the degrees of Bachelors of Science in Music Education, Bachelor of Science in Music Therapy, and Bachelor of Arts in Music.

The music education major requires Music 101, 102, 103, 104, 105, 201, 202, 203, 204, 231, 234, 237, 301, 311, 312, 321, 322, 343, 415 or 417, 440, 441, 442, 471, a minimum of twelve hours of applied music instruction, a minimum of eight credit hours in ensemble participation, a senior recital, and Education 205 and 225d. Music education majors may elect a choral, instrumental, or general emphasis, the requirements of each emphasis varying slightly from the above. The major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 101, 102, 103, 104, 105, 141, 151, 201, 202, 203, 204, 231, 234, 237, 252, 301, 311, 321, 343, 353, 354, 415 or 417, 440, 441, 442, 455, 456, 473, 474, 475, 476, 477, 478, 479, a minimum of eight semester hours in applied music instruction, a senior recital, and a minimum of six hours credit in ensemble.

Admission into the music therapy and music education majors does not imply that a student is guaranteed completion of the degree. The advisor, in conjunction with the Music Department faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or unsatisfactory academic performance. The student has the right of appeal of a decision based on unprofessional behavior in the same manner as dismissal for academically-related reasons.

In order to remain in the department as a music therapy or music education major, a student must maintain the following standards:

(1) A *music therapy major* must earn a grade of C or better in all music and music therapy courses. A *music education major* must earn a grade of C or better in all music and music education courses, and in Education 205.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicum and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

A six-month internship in an approved clinical facility is required for the music therapy degree. This internship is taken after the completion of the four-year music therapy major.

The music therapy major is approved by the National Association for Music Therapy and the National Association of Schools of Music. The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools and Music.

The Bachelor of Arts in Music normally requires Music 101, 102, 103, 104, 105, 201, 202, 203, 204, 321, 322, 415 or 417, 419, 440, 441, 442, twelve semester hours credit in applied music, a senior recital, and three hours of ensemble credit. The music requirements of the bachelor of arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental adviser, each bachelor of arts music major works out a program which includes at least 40 hours of music courses.

The minor in music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The minor in music requires Music 101-103; 102-104; 105; 415 or 417 or 441 or 442; performing competency in one applied music area equal to the end of the sophomore year level; minimum of three hours of music elective; minimum of two credits of music ensemble participation; and attendance at Repertoire Class (Music 100) for two semesters.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

A copy of other departmental graduation requirements for music majors, including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained from the department chair.

The Department has a Preparatory Division which offers instruction to precollege students, adults, and college students who desire to take instruction without credit. Instruction is available from qualified instructors and departmental faculty.

Interested persons should contact the director of the Preparatory Division.

100 Repertoire Class

Eight semesters of Repertoire Class are required of music majors for graduation. Four semesters of Repertoire Class are required of music minors for graduation.

101 Music Theory

2 credits. (Core) Fundamentals of music theory, harmony, and form, with emphasis on scales, keys, modes, and notation. Prof. Douglas.

102 Music Theory

2 credits. (Core) A continuation of Music 101, with an introduction to nonharmonic tones and seventh chords. Includes binary and ternary forms plus elementary keyboard harmony. *Prerequisites:* Music 101; permission of instructor. Prof. Douglas.

103 Fundamentals of Sight-Singing, Ear-Training, and Keyboard Harmony

1 credit. Development of visual, aural, and basic keyboard skills related to the theoretical and analytical materials covered in Music 101. *Corequisite:* Music 101. (Students who fail Music 103 are not permitted to enroll in second semester theory, Music 102.) Prof. Douglas.

104 Sight-Singing, Ear-Training, and Keyboard Harmony

1 credit. A continuation of 103. *Prerequisite:* Music 103 or permission of instructor. (Students who fail Music 104 are not permitted to enroll in advanced music theory, Music 201.) Spring semester. Prof. Douglas.

105 Introduction to Music Literature

3 credits. (Core) Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Harrison, Stites.

III Voice Class

1 credit. (Core) Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Prof. Simmers.

113 Piano Class

1 credit. Designed to develop basic piano skills and knowledge of music fundamentals. Daily practice required. Not open to music majors. Credit for Music 113 given only upon completion of Music 114. Fall semester. Prof. Shinn.

114 Piano Class

1 credit. A continuation of Music 113. *Prerequisite:* Music 113. Spring semester. Prof. Shinn.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite:* permission of instructor for nonmajors. Prof. Harrison.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various

guitar styles, the performers, music, and types of guitars. Prof. Englar.

120 Guitar Class

1 credit. (Core) A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite: Music 119 or permission of instructor.* Prof. Englar.

141 Recreational Music

1 credit. The use of recreational instruments, materials and techniques with handicapped persons. *Prerequisite: music major or permission of instructor.* Spring semester.

151 Introduction to Music Therapy

3 credits. A survey of music therapy through lecture-demonstration sessions, reading, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Shinn.

201 Advanced Music Theory

2 credits. Advanced harmony including seventh chords, chromatic harmony, and form and analysis. 18th century Counterpoint is introduced. Fall semester. Prof. Douglas.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on 19th and 20th century harmonic practice. Includes compositions using 18th century contrapuntal techniques. Spring semester. Prof. Douglas.

203 Advanced Sight-Singing, Ear-Training and Keyboard Harmony

1 credit. Continued emphasis on reading and dictation skills. (Students who fail Music 203 are not permitted to enroll in Music 202.) Fall semester. Prof. Douglas.

204 Advanced Sight-Singing, Ear-Training and Keyboard Harmony

1 credit. A continuation of Music 203. *Prerequisite: Music 203 or permission of instructor; corequisite: Music 202.* Spring semester. Prof. Douglas.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French Horn, baritone, trombone, and tuba. Fall semester. Prof. Douglas.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. Spring semester. Prof. Luckenbill.

235 History of Jazz

3 credits. (Core) Exploration of the chronological development of jazz as an American art form, from Blues and Ragtime to Third Stream and current styles. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, viola,

violincello, and double bass. Fall semester. Prof. Leithmann.

238 Intermediate String Class

1 credit. A continuation of 237 dealing with the study of cello and double bass. *Prerequisite: Music 237.* Spring semester. Prof. Leithmann.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Shinn.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies, improvising music, and transposing at the keyboard. *Prerequisites: Music 202-204, 269.* Prof. Kitchen.

311 Music in the Elementary School

3 credits. Thorough study of objectives, methods, and materials for elementary school music programs through singing, instrumental, rhythmic, creative, and listening activities. Detailed study and use of recent school music songbook series. Observations and laboratory experience included. *Prerequisite: music majors or permission of instructor.* Fall semester. Prof. Stites.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experience included. Spring semester. Prof. Kitchen.

321 Instrumental-Choral Conducting Fundamentals

3 credits. Instruction in directing choruses, bands, and orchestras. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisite: Music 202 or permission of instructor.* Profs. Kitchen, Simmers.

322 Instrumental-Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Profs. Simmers, Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Basic theory and skills in singing, song leading, and conducting, playing classroom instruments, listening and rhythmic activities, teaching music lesson plans, and observation of classroom music instruction included. Offered each semester. Prof. Stites, Staff.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and an introduction to string ensemble techniques, methods, and literature. *Prerequisite: Music 238.* Fall semester. Prof. Leithmann.

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for

teaching flute, oboe, clarinet, bassoon, and saxophone. Fall semester. Prof. Kitchen.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343.* Spring semester. Prof. Kitchen.

353 Techniques in Therapy

2 credits. Behavioral research techniques and how they apply to the uses of music in the therapeutic setting. Students examine the role music has in altering social and academic behavior in therapeutic applications and in life as a whole. *Prerequisite: Music 252.* Fall semester. Prof. Shinn.

354 Research Methods

2 credits. An introduction to the methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. *Prerequisite: Psychology 105.* Fall semester. Prof. Ellsworth.

371-380 Special Problems

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

415 Classical-Romantic Music Literature

2 credits. (Core) Survey of instrumental and vocal music of the Classical and Romantic periods. *Prerequisite: Music 105 or permission of instructor.* Fall semester. Prof. Shull.

417 Twentieth Century Music Literature

2 credits. (Core) Survey of music from Impressionism to the present avant-garde styles. *Prerequisite: Music 105 or permission of instructor.* Spring semester. Prof. Harrison.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisite or corequisite: Music 202.* Offered on sufficient demand. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. Credit for Music 431 is given only upon completion of Music 432. *Prerequisites: two semesters of Music 269.* Alternate years. Profs. Harrison, Seyler.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite: Music 431.* Prof. Harrison.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. *Prerequisites: Music 202 and 204.* Prof. Douglas.

441 History of Music

3 credits. Survey course from antiquity to the Baroque era with emphasis on the development of musical forms, styles, and media through considering music literature in its cul-

tural environment. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Shull.

442 History of Music

3 credits. Survey course from the Baroque through the Contemporary era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite: Music 202 or permission of instructor.* Spring semester. Prof. Shull.

455 Music in Therapy I: Principles

3 credits. Survey of experimental studies dealing with the effects of music on behavior, the intervention of music in therapy, and basic therapeutic approaches and techniques. *Prerequisites: Music 252, 353, 354; or permission of instructor.* Prof. Shinn.

456 Music in Therapy II: Practices

3 credits. Therapeutic approaches and techniques in music therapy. *Prerequisite: Music 455 or permission of instructor.* Prof. Shinn.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite: permission of Department.* Prof. Kitchen.

473-78 Clinical Experiences I-VI: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. Minimum of thirty hours total for each clinical experience. Music therapy majors only. *Prerequisites: Music 141, 151.* Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite: permission of instructor.* Prof. Shinn.

481-490 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, or research under faculty supervision. *Prerequisite: permission of instructor.* Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department chair for a list of standards for each applied area. Students who have not attained the level necessary for credit may work through the Preparatory Division. Nonmusic majors with no piano background or limited background may enroll in Piano Class (Music 113, 114). Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles. Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; they may repeat the ensembles for credit which they apply to the fine arts Core requirement. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director.

268 Voice

1 credit. (Core) Profs. Simmers, Stites.

269 Piano

1 credit. (Core) Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Seyler, Shull.

270 Organ

1 credit. (Core) Prof. Shull.

271 Violin

1 credit. (Core) Prof. Leithmann.

272 Viola

1 credit. (Core) Prof. Leithmann.

273 Cello

1 credit. (Core) Prof. Leithmann.

274 String Bass

1 credit. (Core) Prof. Leithmann.

275 Guitar

1 credit. (Core) Prof. Englar.

276 Flute

1 credit. (Core) Prof. Metz.

277 Clarinet

1 credit. (Core) Prof. Kitchen.

278 Oboe

1 credit. (Core) Staff.

279 Bassoon

1 credit. (Core) Staff.

280 Saxophone

1 credit. (Core) Prof. Kitchen.

281 Trumpet/Cornet

1 credit. (Core) Prof. Douglas.

282 French Horn

1 credit. (Core) Prof. Douglas.

283 Trombone

1 credit. (Core) Prof. Douglas.

284 Baritone

1 credit. (Core) Prof. Douglas.

285 Tuba

1 credit. (Core) Prof. Douglas.

286 Percussion

1 credit. (Core) Prof. Luckenbill.

360 Chamber Music

½ credit. (Core) General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Collegians (men's choir), Piano Trio, and Piano Ensemble will be formed as need arises.

361 Concert Choir

1 credit. (Core) Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Simmers.

362 Choral Union

½ credit. (Core) Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. Stites.

365 Orchestra

1 credit. (Core) Performs three major concerts during the academic year which constitute an invaluable part of musical training in literature and technique of performance. *Prerequisite for winds and percussion: permission of instructor.* Prof. Leithmann.

368 Jazz Band

½ credit. (Core) The Elizabethtown College Jazz Band serves as an integral part of the College curriculum. It functions as a laboratory and as a touring band, playing the best in swing and jazz with the big band sound. Its program of music includes swing, pop tunes, ballads, and jazz, including old standards and current progressive jazz. Ms. Foor.

369 Concert Band

1 credit. (Core) Open to any qualified student; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

255 Stagecraft/Lighting

3 credits. (Core) The technique and theory of staging and lighting theatre productions. Topics include set design and construction; and planning and executing lighting effects.

265 Basic Acting

3 credits. (Core) An examination of the art and craft of the stage actor. Skills are developed in voice, acting style, and theory. Students are required to participate in a number of class projects involving the memorization of parts.

French

See Department of Modern Languages, page 41.

German

See Department of Modern Languages, page 41.

Department of History

Professors K. Kreider, Mumford (*Chair*), Vassady,
Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 105 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts in History as a history major and receive certification in the social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

For a *minor in history*, the student must successfully complete 21 hours of course work, composed of the following courses: History 105, 201, 202, 390, one other course in United States history, one other course in European history, and one course in non-United States, non-European history. Students with specific career or personal interests are encouraged to discuss these with the department chair.

105 Topics in the History of Western Civilization

3 credits. (Core) A highly selective approach to the long-range developments and to the major problems of our Western heritage. Staff.

201 History of the United States to 1877

3 credits. (Core) A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the earliest colonial settlements through the end of post-Civil War Reconstruction—roughly 1877. Profs. Mumford, Winpenny.

202 History of the United States since 1877

3 credits. (Core) A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the beginning of Reconstruction—roughly 1865—through the present. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. (Core) A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

215 English History to 1603

3 credits. (Core) Medieval England from the Anglo-Saxons to Queen Elizabeth I, with emphasis on the constitutional and legal foundations, and the role of the Church. Prof. Poole.

216 English History since 1603

3 credits. (Core) Modern Britain since James I, with emphasis on the evolution of the parliamentary form of government and Britain's role as a world power. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. (Core) Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Prof. Kreider.

218 Europe in the Twentieth Century

3 credits. (Core) An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Prof. Kreider.

219 History of Tsarist Russia

3 credits. (Core) The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Prof. Kreider.

220 History of Soviet Union

3 credits. (Core) A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Prof. Kreider.

223 History of China

3 credits. (Core) A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

224 History of Japan

3 credits. (Core) A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

306 Recent History of the United States

3 credits. (Core) An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

308 Technology and American Society

3 credits. (Core) The impact of technology on the development of American society, and also the extent to which American values have shaped the technology. Focus is primarily on the 19th and 20th centuries—from the Age of Steam to the Space Age. Prof. Winpenny.

310 Immigration and Ethnicity

3 credits. (Core) A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. (Core) The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. (Core) Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

327 History of Africa

3 credits. (Core) A survey of African history and culture using an interdisciplinary approach, with emphasis on the history of the politics, cultures, arts, and societies of the African people. Prof. Vassady.

328 Modern Africa

3 credits. (Core) Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330–339 Studies in United States History

3 credits for each course. (Core) An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340–349 Minorities in United States History

3 credits for each course. (Core) An incisive view of minorities in a society venerating majoritarian rule; for example, Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history.

370–379 Special Problems

3 credits. (Core) Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. (Core) The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. (Core) A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Prof. Mumford.

406 Social and Intellectual History of the United States

3 credits. (Core) An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Prof. Mumford.

411 Greek and Roman History

3 credits. (Core) Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. By special arrangement. Prof. Poole.

412 Medieval History

3 credits. (Core) Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. By special arrangement. Prof. Poole.

480–489 Independent Study

Variable credit. (Core) Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites:* approval of the department chair and the Provost, permission of instructor. Staff.

498–499 History Seminar

3 credits. (Core) A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell (*Chair*), Bossler, D. Koontz, Shubert
Associate Professors R. Dolan, J. Koontz, Morse

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

These courses also satisfy the General Education Core requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers six concentrations. The *pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The *general mathematics concentration* is for those who want the flexibility to design their own programs in mathematics.

For the nonmathematics major, the department offers a choice of two minors: *in statistics* and *in mathematics*. Each is developed on a common foundation of twelve hours of calculus and three hours of linear algebra. The *minor in statistics* is designed to provide training specifically in this field, while the *minor in mathematics* allows the student the flexibility of course selection. In addition to Mathematics 121, 122, 222, and 201, the minor requirements are as follows:

The *minor in statistics* requires Mathematics 151, 252, 351, and 352.

The *minor in mathematics* requires three courses above the level of Mathematics 212, at least one of which must be selected from Mathematics 301, 303, 421, 422.

All mathematics majors are required to take a minimum of 42 hours in mathematics courses, including Mathematics 121, 122, 151, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 212).

The *pure mathematics concentration* requires Mathematics 301, 421, 422, and three courses from other acceptable mathematics electives.

The *secondary education concentration* (required for secondary education certification) requires Mathematics 301, 341, 351, 421, and two courses from other acceptable mathematics electives. In addition, Psychology 105; Education 305, 225d, 415, 225e, 473.

The *actuarial science concentration* requires Mathematics 351, 352, 453, 362, and 331. In addition, Accounting 105, 106; Economics 101, 102. Also required is the passing of at least one examination of the Society of Actuaries by December of the senior year.

The *statistics concentration* requires Mathematics 252, 351, 352, 453, 331.

The *computer science concentration* requires Mathematics 303, 362, and three other acceptable mathematics electives, at least one of which must be 352 or 422; Computer Science 122, 221, 222, and one other 300- or 400- level computer science course except 321. (These computer courses also fulfill the modern language or computer skills requirement.)

The *general mathematics concentration* requires five acceptable mathematics electives, at least one of which must be 352 or 422.

011 Intermediate Algebra (Developmental Studies 011)

2 credits. The fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101 and 117. Credits do not count toward the 128 required for graduation. Fall semester. Staff.

101 Precalculus Mathematics

4 credits. (Core) Precalculus study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency)*. Fall semester. Staff.

117 Concepts of Calculus

4 credits. (Core) Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency)*. Staff.

121 Calculus I

4 credits. (Core) The basic concepts and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency)*. Staff.

122 Calculus II

4 credits. (Core) A continuation of 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry is also included. *Prerequisite: Mathematics 121*. Staff.

131 Finite Mathematics

3 credits. (Core) A study of various noncalculus topics, including set theory, logic, probability, matrices, linear programming, and Markov chains. Applications are drawn from

the biological and social sciences. *Prerequisite: Mathematics 151.* Spring semester. Staff.

151 Probability and Statistics

3 credits. (Core) The basic principles of probability, frequency distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and tools, and their relation to everyday life. Staff.

201 Linear Algebra

3 credits. (Core) A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, and linear transformations. *Prerequisite: Mathematics 121.* Prof. J. Koontz.

211 Concepts in Modern Mathematics I

3 credits. (Core) An introduction for liberal arts students and prospective elementary teachers to some of the concepts and applications of modern mathematics. Includes such topics as sets and functions, logic, measurement, metric system, introduction to the computer, numeration systems, and number theory. Meets core requirements only for elementary and early childhood education majors. Prof. D. Koontz.

212 Concepts in Modern Mathematics II

3 credits. (Core) A continuation of 211 for prospective elementary teachers. Topics include the structure of number systems, geometry, geometry of measurement, and an introduction to probability and statistics. Meets Core requirements only for elementary and early childhood education majors. *Prerequisite: Mathematics 211 or permission of instructor* Prof. Bossler.

222 Calculus III

4 credits. (Core) A continuation of 122, completing the basic topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs, and trees, Boolean algebras, groups, and fields. *Prerequisite: Mathematics 151.* Fall semester. Prof. Shubert.

252 Statistical Methods

3 credits. (Core) A continuation of material presented in 151. Statistical techniques useful in business, the social, physical, and life sciences emphasized. Topics include simple and multiple regression analysis, elements of experimental design, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Algebraic Structures

3 credits. (Core) A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: MA 201.* Fall semester, alternate years. Prof. Morse.

303 Applied Algebra

3 credits. (Core) A study of abstract algebra, stressing set-

relation systems with specific attention to their applications in computer science and combinatorics, rather than the binary operation systems studied in MA 301. Topics include sets, binary relations, set functions, partial ordering, Boolean algebras, finite state machines, groups, and modular arithmetic. *Prerequisites: MA 201, 231.* Spring, alternate years. Prof. Morse.

321 Differential Equations

3 credits. (Core) A study of standard methods for solving ordinary differential equations and boundary value problems. Topics include n^{th} order linear differential equations, the Laplace transformation, and power series solutions. *Prerequisite: Mathematics 222.* Spring semester. Prof. Shubert.

324 Mathematical Models and Applications

3 credits. (Core) Survey of a number of mathematical topics and a variety of models in the social and life sciences. Problems provide motivation for the development of tools and techniques employed throughout applied mathematics: axiomatics, probability theory, matrix algebra, simulation, and linear programming. *Prerequisites: Mathematics 201, 222.* Spring, alternate years. Prof. Morse.

331 Operations Research

3 credits. (Core) A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: MA 151, 201; CS 121.* Spring, alternate years. Prof. Shubert.

341 Modern Geometry

3 credits. (Core) The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall, alternate years. Prof. Morse.

351 Mathematical Statistics I

3 credits. (Core) A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's t , Snedecor's F , and normal distributions. *Prerequisite: Mathematics 222.* Fall, alternate years. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. (Core) A continuation of 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 201, 351.* Spring, alternate years. Prof. Blaisdell.

362 Numerical Analysis

3 credits. (Core) A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in engineering and the sciences. Topics include curve fitting and function approximation, numerical integration and differentiation, numerical methods in matrix algebra. *Prerequisites: MA 201, 222; CS 121.* Spring, alternate years. Prof. R. Dolan.

370-379 Special Topics in Mathematics

Variable Credit. (Core) Directed study in topics of special

interest to advanced undergraduate mathematics students.
Prerequisite: permission of the department chair. Staff.

421 Real Analysis I

3 credits. (Core) A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, series of real numbers, limits and metric spaces, and continuity. *Prerequisites:* *Mathematics 201, 222.* Fall, alternate years. Prof. D. Koontz.

422 Real Analysis II

3 credits. (Core) A continuation of 421, including such topics as integration, differentiation, Taylor series, sequences of functions, and series of functions. *Prerequisite:* *Mathematics 421.* Spring, alternate years. Prof. D. Koontz.

453 Regression and Time Series Analysis

3 credits. (Core) A study of the theory and application of statistical methodology pertaining to model building. The main topics are fixed effects analysis of variance models, multiple regression models, and time series analysis. *Prerequisite:* *MA 352.* Fall, alternate years. Prof. Blaisdell.

480-489 Independent Study

Variable credit. (Core) Staff.

Education 305 Practicum in Secondary Education: Mathematics

4 credits. *Prerequisite:* *Psychology 105;* *corequisite:* *Education 225d.* Prof. R. Dolan.

Department of Modern Languages

Associate Professors Daiga, Goodling
Assistant Professor Trachte (*Chair*)

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture from which the language springs and which it expresses. The pragmatic virtues of a usable skill are joined with the humane values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish.* The requirements of a major may be met by completing 30 credit hours in one language above 112. A minimum of 9 hours above 112 must be taken in residence at Elizabethtown College. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are encouraged to participate in the Brethren College Abroad program.

Department majors must complete the following courses: in residence—Modern Language 211, 212, and 311; 323 and a three-credit independent study project (481-490); in the Brethren Colleges Abroad Program—Advanced Conversation and Composition, Phonetics, French/German/Spanish History, and History of (French/German/Spanish) Literature. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are a minimum of 12 credits above Modern Language 112 in the following courses: Modern Language 211, 212, 311 and 312 or 323. The internship, Modern Language 318, is optional. After completing the required course work, students must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The Modern Language Association Cooperative Foreign Language test is administered free of charge during Freshman Orientation Week and in spring semester of each year. It may be taken at any other time during the academic year for the general college fee of \$20. All students with more than one year of language preparation must take the placement test before registering in language courses for academic credit.

***III Fundamentals of Language and Culture (French, German, Spanish)**

5 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and sociocultural awareness. Emphasis on culture-based documents and collateral laboratory assignments. Fall semester.

112 Fundamentals of Language and Culture

5 credits. (Core) Continuation of 111 with expansion of structures, contexts and cultural topics. Completes bachelor of arts language requirement. *Prerequisite:* 111 or placement by examination. Fr 112 and Sp 112 are offered in the fall and spring semester.

***2II Oral Expression (French, German, Spanish)**

3 credits. Emphasizes expanded functional proficiency, with particular attention to the speaking and listening skills. A functional-notional syllabus allows for progression through essential language functions presented in a variety of culturally authentic contexts. Students study selected contemporary texts to provide a frame for their discussions and to review grammatical structures. *Prerequisite:* *Modern Language 112 or permission of instructor.* Fall semester.

***212 Textual Analysis and Composition (French, German, Spanish)**

3 credits. Presented as a writing workshop, stressing the skills needed for good expository writing. Students are actively involved in the editing and revising of their work. They study advanced grammatical structures and are involved in textual analysis of selected prose masterpieces in

the foreign language. A continued emphasis on correct oral expression is made. *Prerequisite: Modern Language 211 or permission of instructor.* Spring semester.

***311 Making of Modern Society**
(French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena which are organized thematically (centralization, industrialization, class structure, education, etc.). By tracing the origins of current institutions, values, and attitudes, students gain a perspective on the historical and cultural forces which shaped the modern nation. Readings are taken from literary, sociological, and political sources. Films, slides and audio, and videotapes supplement written materials. *Prerequisite: Modern Language 212 or permission of instructor.* Fall semester.

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: Modern Language 211 or permission of instructor.* Spring semester.

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Modern Language 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. (Core) Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres.

371-380 Special Topics
(French, German, Spanish, Russian*)

Variable credit. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability.

(*The Russian course provides a reading knowledge in the language.)

481-490 Independent Readings (French, German, Spanish)

Variable credit. (Core) For senior language majors. Independent projects in some area of language or literature. Project may fulfill literature Core requirement, provided topic relates to literature in the foreign language and not to the language itself.

Department of Occupational Therapy

Associate Professor Jones (*Chair*)

Assistant Professors Petersen, Ainsworth, Farley
Instructor Zanowski

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy was accredited in 1976 by the American Occupational Therapy Association and the American Medical Association.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 113, 119, 120, 218, 219, 220, 222, 225, 307, 308, 313, 314, 315, 316, 319, 403, 408, 409, 412, 419, 420, 422, 423; Chemistry 101, 104; Biology 111, 201, 202, 202L; Psychology 105, 225; Anthropology 202 or 211; and Mathematics 151 and either 131 or 252. Due to course sequencing and competencies, Biology 201, 202, 202L and Psychology 225 must be taken at Elizabethtown College.

Academic and Field Work Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of field work education. Students are responsible for their transportation and travel costs to and from assigned clerkship and field work centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II field work experience in the event these are not provided by the affiliated hospital or clinic.

The student may select either of the following options:

First Option: The student may complete three years of academic work followed by three months of Level-II field work experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II field work the next summer.

Second Option: The student may complete four years of

academic work followed by six months of Level-II field work experience.

Additional Field Work Education

After completing the required six months of Level-II field work, the student may elect to complete additional Level-II field work. This study may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education.

Related Expenses

Additional expenses for the occupational therapy student normally include insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association at the reduced student rates.

National Certification Examination

Upon being awarded the degree in occupational therapy and successful completion of Level-II field work, the student is eligible to sit for the national certification examination, held twice a year, usually in June and January.

Admission Requirements for the Department

1. Prior to admission into the Department:

- a. The student must submit an application to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. *Due to course sequencing, the department does not accept transfer students from within or outside the college.*
- b. The student has an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- c. The Occupational Therapy faculty selects the students for the next academic year and submits their names to the Director of Admissions.
- d. The Department of Occupational Therapy requires that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a problem (physical or emotional) arise which the Department feels may jeopardize the student's participation in the program.

2. Evaluation after admission into the Department:

- a. Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:

- (1) have at least a 2.5 average in all courses required for the major (both occupational therapy and related requirements).
- (2) Obtain grades of at least C or better in OT 315 and OT 316.
- (3) Satisfactorily meet the standards and requirements in all phases of field work education including Level-I field work, laboratory, and Level-II field work experience.

The curriculum in occupational therapy may be subject to revision in 1987-88.

113 Basic Concepts in Occupational Therapy

3 credits. An introduction to the theoretical basis for the practice of occupational therapy. The historical importance of purposeful and creative activity suitable for the life span continuum; the cultural and developmental use of activity to foster normal development and to treat emotional and physical dysfunction. Involvement in community activities will enrich student understanding of cultural influence. Fall semester. *Permission of instructor for non-majors.*

119 Construction Activities I

2 credits. Overview of construction activities using hard materials such as wood, tile, copper and other media. Instruction in the basic skills of the process, with emphasis on activity analysis and therapeutic application in occupational therapy. *Permission of instructor for non-majors.* Fall semester.

120 Construction Activities II

2 credits. Overview of construction activities using soft materials such as weaving, textiles, needlework, macrame. Instruction in the basic skills of the process, with examination of each activity for its therapeutic potential. *Permission of instructor for non-majors.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy. Emphasis on normal movement and patterns of movement including body mechanics, grasp and gait analysis. *Prerequisites: Biology 201; and permission of instructor for non-majors.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, collage, and blockprinting. *Occupational therapy majors only.* Fall semester.

220 Life Skills

2 credits. An examination of the daily activities of people including self-care, vocational, recreational and social functions. Emphasis and analysis of normal patterns of activity through lecture and laboratory sessions. *Occupational therapy majors only.* Spring semester.

222 Group Process

2 credits. A learning experience in which the student is exposed to theories, dynamics and stages of groups. Planning occupational therapy activity groups is emphasized. *Permission of instructor for non-majors.* Spring semester.

225 Human Development Laboratory

3 credits. Refer to Psychology 225 for lecture description. The laboratory emphasizes the central nervous system

maturation as it relates to normal sequential motor development and social/emotional growth. Concentration is on reflexive motor behavior and age appropriate activities during the multiple stages of the life continuum. *Corequisite: Psychology 225. Permission of instructor for non-majors.* Fall semester.

307 Neurobehavioral Science I: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of instructor for non-majors.* Fall semester.

308 Neurobehavioral Science II: Perspectives in Psychiatry

3 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, 225. Permission of instructor for non-majors.* Spring semester.

313 Medical Surgical Conditions I

2 credits. Medical lectures relative to the etiology, prognosis and treatment of the major conditions resulting in physical disability. *Permission of the instructor for non-majors.* Fall semester.

314 Medical Surgical Conditions II

2 credits. Lectures relative to etiology, prognosis and treatment and major pediatric diagnoses of other general medical conditions. *Permission of the instructor for non-majors.* Spring semester.

315 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approach used to enhance the function of individuals with major physical disabilities. Lecture, laboratory, seminar, and Level-I Field Work experience. *Prerequisite: Occupational Therapy 218; corequisite: CPR certification.* Occupational therapy majors only. Fall semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns, case studies, and professional reporting are coordinated with Level-I Fieldwork experience, lecture, laboratory, and seminar. *Prerequisites: Psychology 105, 225, Occupational Therapy 222.* Occupational therapy majors only. Spring semester.

319 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite: Biology 201.* Occupational therapy majors only. Fall semester.

357 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of instructor required for majors and non-majors.* Fall semester.

370-79 Special Topics

A series of variable-credit courses with topics not otherwise

covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of instructor.*

403 Perspectives in Pediatrics

3 credits. A comprehensive study of the treatment of pediatric patients with psychosocial and/or physical dysfunction. Impact on the family, importance of play, assessment tools and treatment techniques are reinforced through clerkship experience. *Prerequisites: Occupational Therapy 314, 315, 316. Occupational therapy majors only.* Fall semester.

408 Advanced Concepts with Material Cultures

3 credits. A study of the establishment and administration of occupational therapy programs. Quality assurance, the structure of AOTA, its relationship to the National Health Care System, and current legislative issues are discussed. *Permission of instructor for non-majors.* Fall semester.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. *Prerequisites: MA 151, MA 252 suggested. Permission of instructor for non-majors.* Fall semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. *Prerequisite: OT 409.* Spring semester. Occupational therapy majors only.

419 Prevocational Activities

2 credits. A study of the principles and techniques used in the vocational assessment of selected patients with potential for employment. Prerequisite activity courses are the foundation for discussion and laboratory experiences. *Occupational therapy majors only.* Fall semester.

420 Sensory Integration

2 credits. Introduction to study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational therapy majors only.* Spring semester.

422 Kinesiology II

2 credits. Advanced principles of movement, including the influence of cultural, psychological, and physiological factors. Use of movement in the evaluation and habilitation/rehabilitation of individuals with dysfunction. *Occupational therapy majors only.* Spring semester.

423 Human Relations

2 credits. An integrative approach to the relationship of the therapist and patient emphasizing the responsibilities of both. Group interaction, one to one therapeutic relationships, roles and leadership are addressed. *Occupational therapy majors only.* Spring semester.

Philosophy

See Department of Religion and Philosophy, Page 52.

Department of Physical Education and Health

Associate Professor Ober (*Chair and Athletic Director*)
Assistant Professors Garrett, Kauffman, Smith,
Whitmore
Instructor Roderick

The Department of Physical Education and Health provides students with opportunities to develop an interest in play and recreation which are fun and worthwhile to them during college and later life. They also develop social and moral standards, such as sportsmanship, teamwork, tolerance, and other character benefits, which come from properly conducted play.

All students are required to take four semester hours of physical education courses, of which two may be taken in aquatics. Students must take at least one semester of an aquatics activity or successfully complete a proficiency test in swimming, which must be taken no later than the fall of the sophomore year. This test may be taken only once. A transfer student who desires to take the test must do so at the beginning of his or her first semester.

The remaining physical education requirements may be satisfied by electing any of the courses offered, except Physical Education 275 and 285. No more than six semester hours of physical education may be counted toward the 128 hours required for graduation. Physical Education 270 counts as three credits towards graduation, but only as one activity towards meeting the Core requirements.

105 Beginning Swimming (women)

1 credit. (Core) Elementary-level instruction in the basic strokes for nonswimmers.

115 Intermediate Swimming (women)

1 credit. (Core) Instruction in the techniques of the basic strokes, survival swimming, and water safety.

125 Beginning Swimming (men)

1 credit. (Core) Elementary-level instruction in the basic strokes for nonswimmers.

135 Intermediate Swimming (men)

1 credit. (Core) Instruction in the techniques of the basic strokes, survival swimming, and water safety.

145 Field Hockey-Volleyball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

150 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

155 Tennis-Bowling (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

160 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

165 Golf-Badminton (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

185 Basketball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

195 Soccer

1 credit. (Core) Rules, playing techniques, and skill development.

205 Archery-Badminton (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

210 Basketball (men)

1 credit. (Core) Rules, playing techniques, and skill development. Spring semester.

217 Advanced Life Saving

1 credit. (Core) Instruction and practice in life-saving, water safety, and pool management. Meets Red Cross certification requirements. Graded pass/no pass.

218 Water Safety Instruction (coed)

1 credit. (Core) Advanced lifesaving skills, swimming instruction, and use of pool equipment. Meets Red Cross Instructor certification requirements. Graded pass/no pass. *Prerequisite: current Senior Lifesaving Certificate.*

225 Tennis (women)

1 credit. (Core) Rules, playing techniques, and skill development. Fall semester.

235 Tennis (men)

1 credit. (Core) Rules, playing techniques, and skill development. Fall semester.

240 Bowling

1 credit. (Core) Rules, playing techniques, and skill development.

245 Racquetball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

250 Volleyball (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

255 Handball-Racquetball (men)

1 credit. (Core) Rules, playing techniques, and skill development.

260 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

265 Physical Conditioning (coed)

1 credit. (Core) Techniques of exercise, jogging, weight training, and body development.

270 Advanced Individual Sports

3 credits. (Only one hour credit counts for Core.) Methods, techniques, and teaching skills in selected sports. Summer session only.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades. *Required of Elementary education majors.*

290 Interpretive Movement (Same as Dance 101)

1 credit. Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Prof. Williams.

295 Introduction to Ballet (Same as Dance 102)

1 credit. Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Prof. Williams.

370-380 Special Topics in Physical Education (coed)

1 credit. (Core) Such physical activity instruction as horsemanship, bicycling, self-defense techniques, or skiing, for which there may be an extra charge. Graded pass/no pass.

481-490 Self-Directed Physical Education Activity

1 credit. (Core) For the student who attends Evening Division, or studies abroad, or has extenuating circumstances which prohibit the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

Department of Physics and Earth Science

Professor Ranck (*Acting Chairman*)

Associate Professors Cyranski, Thompson

Adjuncts Ferruzza, Gray, Leap, Reeder, Schaeffer

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics and Earth Science are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in contemporary society. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal

learning experiences, many of which are intended to develop students' abilities for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in departmental programs commonly go on to careers in physics, engineering, computer technology, and teaching, or to graduate school.

The Department offers four programs: 1) a Bachelor of Science in Physics, 2) a cooperative program in engineering at the completion of which the student is awarded a bachelor of science degree from The Pennsylvania State University and a bachelor of arts degree from Elizabethtown College, 3) two options for secondary education majors: physics or general science with a concentration in physics, and 4) a physics minor. In addition, students majoring in physics may pursue a premedical program.

Physics majors are required to take Physics 101, 102, 202, 204, 221, 241, 301, 302, 351, 352, 361, 362, 421, 422, 461, 462, 491, 492, and two of 423, 424, 471, 472; Chemistry 101, 104; Mathematics 121, 122, 222, 201 and 321; Computer Science 115.

Engineering majors complete three years at Elizabethtown College and two years at The Pennsylvania State University. To be eligible for admission at The Pennsylvania State University, a student must have a 3.0 cumulative average at Elizabethtown College and be recommended by Elizabethtown College. At Elizabethtown College, the student will complete Physics 101, 102, 202, 204, 221, 241, 301, 302, 351, 352, 361, 362; Drawing 115, 116; Mathematics 121, 122, 222, 201, 321; Chemistry 101, 104; Computer Science 115.

Secondary education majors in physics are required to take Physics 101, 102, 202, 204, 221, 241, 351, 361, 362; Chemistry 101, 104; Biology 105, and 106 or 108; Mathematics 121, 122, 201; Computer Science 115; Psychology 105; Education 305, 225d, 415, 225e, 473; and three additional credits of electives from the offerings of the Department of Physics and Earth Science.

Secondary education majors in general science (physics concentration) should consult the interdisciplinary section of the catalog for a complete description and a listing of required courses.

Physics minors are required to take Physics 101, 102, 202, 204, 221; and one additional physics course selected from those taken by majors. This minor will allow the majors in computer science, mathematics, biology, and chemistry to develop a broad-based competency in basic physics. It is also suitable for majors in other departments who enjoy the rigors of physics but who are unable to fit a full physics major program into their schedules. (Students should carefully check the course listing for the prerequisites for each physics course.)

Premedical students may also major in physics. They must meet the requirements for a Bachelor of Science in Physics but with additional courses in biology and chemistry. More details are given in the Premedical and Allied Health Programs listing in the interdisciplinary section.

101 Physics I

4 credits. (Core) An investigation of the basic principles of physics. Topics include classical kinematics and dynamics (friction, gravity, springs, tension, compression, buoyant forces, linear and angular momentum, torque, and statics), energy (work and potential energy), and the kinetic theory of matter. Hours: lecture 3, laboratory 3. *Prerequisite or Corequisite: Mathematics 121.* Fall semester. Prof. Cyranski.

102 Physics II

4 credits. (Core) A continuation of Physics 101. Topics include electricity, magnetism, an introduction to special relativity, and geometrical optics. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 101.* Spring semester. Prof. Cyranski.

III Classical Physics

4 credits. (Core) Introduction to the concepts and methods of physics through a study of the laws of motion, energy, electricity, light, relativity, radioactivity, and other topics of interest. Hours: lecture 3, laboratory 3. *Prerequisite: High school algebra and trigonometry.* Fall semester.

II2 Astronomy

4 credits. (Core) A study of the structure and evolution of stars, planetary systems, and galaxies, and less familiar astronomical objects such as quasars, pulsars, and black holes. Laboratories provide an opportunity to observe the planets, stars, clusters, and galaxies and some practical experience in determining astrometric quantities. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Spring semester. Prof. Schaeffer.

III3 Spacetime Physics

4 credits. (Core) A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

III4 Cosmology

4 credits. (Core) A study of the origins, evolution, and future of the universe. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra and trigonometry.* Spring semester.

III6 Quantum Theory and Reality

4 credits. (Core) A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Hours: lecture 3, laboratory 2. Spring semester. Prof. Ranck.

202 Waves and Energy Transfer

4 credits. (Core) A study of energy transfer including convection, conduction, radiation and waves. Waves are considered in detail, including both their mathematical description and physical manifestations. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 102; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Ferruzza.

204 Thermodynamics

3 credits. (Core) An introduction to thermodynamics as applied to physical and chemical equilibria in ideal and non-ideal homogenous and heterogeneous systems. Phase changes, kinetics, ionic solutions, and electrochemistry are also treated. [This course is the same as Chemistry 242.] Hours: lecture 3. *Prerequisite: Physics 102, Mathematics 122; Prerequisite or corequisite: Chemistry 104 or 114.* Spring semester. Prof. Reeder.

221 Modern Physics

4 credits. (Core) Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. [This course is the same as Chemistry 343.] Hours: lecture 3, laboratory 4. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester.

242 Computer Systems Interfacing

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. [This course is the same as Computer Science 333.] Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

301 Mechanics

3 credits. (Core) An intermediate-level course in mechanics covering generalized coordinate systems, systems of many particles, rigid-body dynamics, central forces, oscillations, collisions, and the formalisms of Lagrange, Hamilton, and Jacobi. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, Mathematics 321.* Fall semester.

302 Electromagnetism

3 credits. (Core) An intermediate course in electromagnetism, including electrostatic field theory, dielectrics, magnetic phenomena, Maxwell's equations, electromagnetic waves, and special relativity. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Prof. Cyranski.

351, 352 Advanced Physics Laboratory I, II

2 credits. Advanced laboratory courses with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. A wide variety of experimental techniques and analyses are used. Individual experimental design are emphasized. Hours: laboratory 6. *Prerequisites: Physics 202, 221, 241.* Fall semester, Spring semester. Staff.

361, 362 Seminar in Physics and Engineering I, II

0.5 credits. A weekly presentation and discussion by students and faculty of topics of current interest in physics, earth science, and engineering. Hours: seminar 1. Fall semester, Spring semester. Staff.

421 Quantum Physics

3 credits. (Core) A systematic development of quantum mechanics including the Schroedinger, Heisenberg, and Dirac formalisms and their interpretations. Topics include the standard solutions to the classical model problems of quantum mechanics, perturbation theory, scattering theory. Hours: lecture 3. *Prerequisites: Physics 221, 301, 302, Mathematics 201, 321.* Fall semester.

422 Statistical Physics

3 credits. (Core) The thermodynamics and statistical mechanics of physical systems based on the principle of

maximum entropy. Topics include the ideal gas, Fermi-Dirac and Bose-Einstein "gases," electrons in metals, blackbody radiation, and elements of transport theory. Hours: lecture 3. *Prerequisite: Physics 421.* Spring semester.

423 General Relativity

3 credits. (Core) The theory of general relativity, including the Schwarzschild and Kerr-Newman black holes, the Robertson-Walker cosmology, weak fields and gravity waves. Hours: lecture 3. *Prerequisites: Mathematics 321, Physics 221 and 302 or permission of the instructor.* Fall semester, alternate years. Prof. Cyranski.

424 Condensed Matter Physics

3 credits. (Core) The application of quantum theory to the study of solids. Topics include Bloch's theorem, the reciprocal lattice, phonons, electronic states, transport and optical properties, the Fermi surface, and elements of superconductivity. Hours: lecture 3. *Prerequisite: Physics 421 or permission of the instructor.* Spring semester, alternate years.

461, 462 Seminar in Physics III, IV

0.5 credits. A weekly presentation and discussion by students and faculty of topics of current interest in physics, earth science, and engineering. Hours: seminar 1. Fall semester, Spring semester. Staff.

471, 472 Topics in Physics

3 credits. (Core) Topics in physics not covered in other courses. Hours: lecture 3. *Prerequisite: Permission of the instructor.* Alternating Fall and Spring semesters. Staff.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of the instructor.* Staff.

491, 492 Research in Physics I, II

2 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of the instructor.* Fall semester, Spring semester. Staff.

DR 115 Graphics and Descriptive Geometry I

2 credits. Study of engineering-related drawing, including constructions, lettering, orthographic projection, sketching, dimensioning, and pictorial drawing. Hours: lecture 1, laboratory 5. Fall semester. Prof. Gray.

DR 116 Graphics and Descriptive Geometry II

3 credits. A continuation of Drawing 115. Topics include spatial relationships of points, lines and planes, intersections of objects, developments, cartography, vectors, graphs. Instruction and practical exercises are given in computer aided drafting (CAD). Hours: lecture 1, laboratory 7. *Prerequisite: Drawing 115.* Spring semester. Prof. Gray.

Earth Science

ES 105 Field Earth Science

8 credits. (Core) An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a com-

prehensive regional geology report. *Prerequisite: Permission of the instructor.* Summer session. Prof. Thompson.

ES 111 Geology I (Materials and Dynamics)

4 credits. (Core) An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity, and geological time. Hours: lecture 3, laboratory 2. Fall semester. Prof. Thompson.

ES 112 Geology II (Origin of Landscape)

4 credits. (Core) The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. *Prerequisite: ES 111.* Spring semester. Prof. Thompson.

ES 115 Meteorology

4 credits. (Core) General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Laboratories include collection and analysis of weather and climatic data, use of special charts and maps, and establishment of physical principles through experiment. Hours: lecture 3, laboratory 2. Fall and spring semesters. Prof. Thompson.

ES 370-379 Special Topics in Earth Science

Variable credits. (Core) Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite: Permission of the instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. (Core) Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of the instructor.* Prof. Thompson.

Department of Political Science

Professor Selcher (*Chair*)
Associate Professor McDonald
Assistant Professor McClellan

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessman. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations,

teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 117, 118, 202, 205, 301, 308, and 330, and twelve credits of political science electives. In addition, Mathematics 151 and Sociology 331 are required. General electives from the other social sciences are encouraged.

For *a minor in political science*, the student must successfully complete 21 hours of course work, composed of the following political science courses: 117, 118, 202, 205, and 301 or 308, and two elective 300/400-level courses. The electives must be chosen in consultation with the department. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/public relations: Political Science 323, 333 (Mass Media and American Politics); (2) law/paralegal/criminal justice: Political Science 329, 401; (3) international affairs: Political Science 305, 342, 413; (4) political theory: Political Science 329, 382; (5) public administration: Political Science 471; and (6) business administration: Political Science 334 (Government and Business).

The Department participates in *the secondary school certification in social studies program* and *the forestry and environmental management major*, offering a political science concentration in each. (See the detailed descriptions in the interdisciplinary section of this catalog.)

105 Introduction to Government

3 credits. (Core) Introduction to the basic terms, concepts, methodologies, and ideas of the tradition of Western political thought with a special emphasis on those ideas which have contributed to the development of the American political order. Prof. McDonald.

117 American National Government

3 credits. (Core) Analysis of the development of the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Prof. McClellan.

118 State and Local Government

3 credits. (Core) Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Prof. McClellan.

202 Political Theory

3 credits. (Core) Analysis of the development of significant political ideas from the Greek city-state to the present. Spring semester. Prof. McDonald.

205 International Relations

3 credits. (Core) Survey of political, economic, legal, psychological, and military features of international relations with consideration of national interest, foreign policy, diplomacy, alliances, and nuclear deterrence. Prof. Selcher.

301 Comparative Governments

3 credits. (Core) A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

305 American Foreign Policy

3 credits. (Core) Analysis of United States foreign relations since World War II, with emphasis on the development of current major issues, the domestic and bureaucratic politics of foreign relations, and policy options in current and future problems. Prof. Selcher.

308 Public Administration

3 credits. (Core) A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. (Core) An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects of nuclear war are among some of the topics examined. Fall semester. Prof. McDonald.

329 American Political Thought

3 credits. (Core) Historical analysis of major American political thinkers from the Puritans to the present with special consideration of the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. *Prerequisite:* MA 151. Prof. Kraybill.

333-339 Topics in Public Policy

3 credits. (Core) Detailed examination of topics in policy development and analysis, such as government regulation of business, the mass media and American politics, and public policies in such areas as health and education. Prof. McClellan.

342 Politics of Developing Nations

3 credits. (Core) An analysis of interdisciplinary theories of political development with application to specific case studies of contemporary nation-building in transitional societies. Spring semester. Prof. Selcher.

370-379 Special Problems

3 credits. (Core) Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

382 Modern Ideologies

3 credits. (Core) A survey of Marxist, socialist, and democratic theories and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

401 Constitutional Law

3 credits. (Core) History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Fall semester 1988. Prof. Gliptis.

413 U.S. Security Policy

3 credits. (Core) Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite:* Political Science 205 or 305 or permission of instructor. Spring semester. Prof. McDonald.

471 Capitol Semester Internship

6 credits. Applied field experience in public administration as a junior assistant in the daily operations of state or local government agencies. *Prerequisites:* Political Science 308 and permission of instructor. Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Associate Professors Dennis, Eiserer, Ellsworth (*Chair*)
Assistant Professor Teske

Bachelor of Arts; Bachelor of Science

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers two degrees: the Bachelor of Arts in Psychology and the Bachelor of Science in Psychology. These degrees differ in their General Education Core requirements. The department offers a minor in psychology and offers a concentration for students pursuing the secondary education certification in social studies (see the interdisciplinary section of this catalog).

Courses required for both the *bachelor of arts* and the *bachelor of science* degrees are Psychology 105, 106, 213, 218, 321, 402, 413 or 414, and 425 or 435; psychology electives for a minimum of 33 credit hours and eight credit hours of biology. For the *bachelor of science* degree, the student is required to complete three credit hours of computer science.

Courses required for the *minor* are Psychology 105, 213, and

twelve additional credit hours, at least six of which are to be in upper division (300/400) courses. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

105 General Psychology

3 credits. (Core) An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. (Core) The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105. Spring semester. Prof. Ellsworth.

201 Addictions

1 credit. The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite:* Psychology 105 or permission of the instructor. Prof. Overdorf.

213 Research Methods

4 credits. (Core) The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105. Fall semester. Prof. Ellsworth.

218 Psychological Statistics

3 credits. (Core) Psychological statistics, emphasizing analysis of variance, varieties of correlation, errors of measurement, and selected nonparametric procedures. *Prerequisite:* Psychology 213. Spring semester. Staff.

225 Developmental Psychology

3 credits. (Core) Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite:* Psychology 105. Prof. Dreiss.

235 Social Psychology

3 credits. (Core) The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as conformity, prejudice, aggression, pro-social behavior, attraction, and love. *Prerequisite:* Psychology 105. Prof. Teske.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite:* music major or permission of instructor. Spring semester. Prof. Shinn.

317 Learning

4 credits. (Core) Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 213. Fall semester. Staff.

321 Theories of Personality

3 credits. (Core) A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite: Psychology 105.* Fall semester. Prof. Teske.

322 Abnormal Psychology

3 credits. (Core) A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite: Psychology 105.* Spring semester. Prof. Dennis.

333 Tests and Measurements

3 credits. (Core) The standardization, validity, and reliability of psychological tests, including the study of standardized tests and their interpretation. *Prerequisite: Psychology 105.* Spring semester. Staff.

334 The Exceptional Child

3 credits. (Core) A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite: Psychology 225 or permission of instructor.* Spring semester. Staff.

370-379 Special Problems in Psychology

Variable credit. (Core) Directed study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite: permission of instructor.* Staff.

401 Counseling Psychology

3 credits. (Core) An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites: Psychology 105 and permission of instructor.* Fall semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. (Core) A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite: Psychology 105.* Fall semester. Prof. Dennis.

413 Perception

3 credits. (Core) A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 or permission of instructor.* Spring semester 1989. Prof. Eiserer.

414 Memory and Thinking

3 credits. (Core) A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 or permission of instructor.* Spring semester 1988. Prof. Ellsworth.

425 Advanced Development Psychology

3 credits. (Core) A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will

be required to conduct a research project. *Prerequisites: Psychology 213, 225, and junior standing, or permission of instructor.* Fall semester. Prof. Teske.

435 Advanced Social Psychology

3 credits. (Core) A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites: Psychology 213 and 235 or permission of instructor.* Fall semester 1988. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites: Psychology 105 and permission of instructor.* Prof. Dennis.

480-489 Independent Study in Psychology

Variable credit. (Core) This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite: permission of instructor.* Staff.

491-492 Research Practicum

Variable credit. (Core) Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites: Psychology 213 and permission of instructor.* Staff.

Department of Religion and Philosophy

Professors Clemens, Puffenberger, Sutphin (*Chair*)
Assistant Professor Matteo

Bachelor of Arts

Considering the heritage of religion and philosophy, the department seeks to broaden the student's liberal arts curriculum by pursuing creative ventures which often cross over traditional disciplinary lines. While committed to the Judaeo-Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a complex and pluralistic religious field. The department encourages in the student a reflective stance which focuses on the basic philosophies, value systems, and faith expressions of mankind as means of preparing the student for seminary, graduate school, social work, counseling, and journalism, among other fields.

A *major* must complete 33 hours of course work in the department beyond the six hours required in the General Education Core. At least 27 hours of this course work must be above the 100 level. A *major* is required to complete a six-hour senior research project by independent study to be supervised and read by at least two members of the department.

A *major* must take the following courses: Religion 101 or 102, Religion 205, Religion 221 or 222, Philosophy 115, and Philosophy 125.

A *minor* shall complete 15 hours in the department beyond the six hours in the Core. Required courses in the minor program are: Religion 101, or 102, Religion 205, Religion 221 or 222, and Philosophy 125. Any student electing the religion and philosophy minor must notify the Department Chair. The purpose of the minor program in religion and philosophy is to acquaint the student with the major divisions within these two areas of study and to provide a basis for future personal inquiry.

Religion

101 Introduction to the History, Literature, and Faith of Israel

3 credits. (Core) The history of Israel as a basis for understanding the literature of the Old Testament and Biblical ways of faith; an introduction to the various tools of Biblical criticism. Fall semester. Staff.

102 Introduction to the History, Literature, and Faith of Christianity

3 credits. (Core) A survey of New Testament history, an orientation to the literature of the New Testament, and an appreciation of the conditions which gave rise to Christianity. Spring semester. Prof. Matteo.

115 Religions of the Modern World

3 credits. (Core) A survey of the major Eastern and Western religious traditions from phenomenological, cultural, and comparative points of view. Prof. Puffenberger.

205 Contemporary Religious Issues

3 credits. (Core) A constantly changing survey of relevant problems and issues on the contemporary religious scene with primary emphasis upon the thought patterns rather than the institutional forms of the Judaeo-Christian faith. Prof. Sutphin.

221 Western Religions

3 credits. (Core) A study of the major religions of the Near East and the Western hemisphere. Primary emphasis on a historical and comparative study of Judaism, Christianity, and Islam. Fall semester. Prof. Puffenberger.

222 Eastern Religions

3 credits. (Core) An encounter with the major living religions of the Far East, with emphasis upon comparative study of Hinduism, Buddhism, Jainism, Confucianism, Taoism, Sikhism, and Shinto. Spring semester. Prof. Puffenberger.

230 Religion in America

3 credits. (Core) The rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, and the identity and integrity of each separate tradition. Prof. Clemens.

231 Contemporary Theology

3 credits. (Core) A deeper exposure to some aspect of theological thinking or to the study of a particular theologian or group of theologians. Fall, alternate years. Profs. Sutphin and Matteo.

320 Biblical Theology

3 credits. (Core) The nature and meaning of the redemptive acts of God in the history of the Hebrews and early Christians. *Prerequisites:* Religion 101, 102. Spring, alternate years. Staff.

330 Anabaptist and Pietistic Movements

3 credits. (Core) The historical and theological backgrounds of the Anabaptist and Pietistic movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Spring, alternate years. Staff.

340 History of Christian Thought

3 credits. (Core) A survey of representative thinkers in the history of the Christian Church and an examination of the central doctrines of the Christian faith. Religion 205 recommended. Fall, alternate years. Prof. Sutphin.

370-79 Special Topics in Religion

3 credits. (Core) An intensive study of a selected area within the sphere of religious faith. Different Departmental staff offer topics such as liberation theology, evangelical theology, civil religion in America, Hebrew, the Buddhist tradition, esoteric religions. Staff.

480-89 Independent Study

Variable credit. Upon the student's initiative, a project of study and research may be taken under the supervision of a faculty member. The senior research project, required of all majors, is normally registered during the student's senior year. For double majors, the requirement is a three-hour independent study. Staff.

Philosophy

115 Contemporary Ethical Issues

3 credits. (Core) Current issues, with attention to the way in which moral norms function within the individual and the society. Emphasis upon heightened self-awareness and the perspective of social ethics. Profs. Clemens and Matteo.

125 Contemporary Philosophical Issues

3 credits. (Core) Issues such as human freedom, the search for the self, and meaning in human life are introduced by means of selected literary and philosophical texts. Prof. Sutphin.

170 Critical Thinking, Writing, and Research

3 credits. (Core) Aim is to strengthen the student's ability to think analytically, to do library research, and to cultivate writing skills. Emphasis is on critical and reflective evaluation of all readings, and discussions of logical procedures. Projects based upon library research provide focus and define common topics for the class. Assigned projects help students learn proper documentation procedures and research resources. Staff.

201 Ancient and Medieval Philosophy

3 credits. (Core) A comparative study of the Platonic and Aristotelian views of life, treating them as metaphors of life rather than as speculations about the nature of life. Fall semester. Staff.

212 Aesthetics

3 credits. (Core) An inquiry into the nature of creativity in the areas of art and science, beginning from the assumption that by comparing and contrasting creativity in these two areas the student comes to a greater understanding of artistic creativity. Spring semester. Staff.

213 Philosophy and Science

3 credits. (Core) A series of readings on scientific methodology, explanation, limitation of science, science and society, science and ethics, and science and religion. Prof. Sutphin.

255 Advanced Ethics

3 credits. (Core) A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

310 Contemporary Philosophy

3 credits. (Core) Study of selected primary sources in existentialism and phenomenology in order to understand some of the more important philosophical assumptions of contemporary culture. Fall semester. Staff.

315 Attitudes Toward Death

3 credits. (Core) A multidisciplinary introduction to the meaning and mystery of death and dying. It presupposes the notion that "the best preparation for life is an in-depth study of its existence." Prof. Puffenberger.

320 Philosophy of Religion

3 credits. (Core) A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs for the existence of God, and the nature of evil. Spring semester. Prof. Sutphin.

340 Modern Philosophy

3 credits. (Core) Reading and discussion of primary sources from the writings of Descartes, Spinoza, Leibnitz, and Kant. Offered on demand. Staff.

370-79 Special Topics in Philosophy

3 credits. (Core) A constantly changing specialized study within the field of philosophy or ethics featuring such areas as existentialism, philosophy of language, communal lifestyles, philosophy East and West. Staff.

480-89 Independent Study

Variable credit.

Department of Sociology, Anthropology, and Social Work

Professor Kraybill

Associate Professors Lehr (*Acting Chair*), Iacono-Harris
(*Director of Social Work Program*)

Assistant Professors B. Hostetler, Kessler

*Bachelor of Arts and Bachelor of Science in Sociology:
Bachelor of Arts in Social Work*

The programs in this department provide for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology and social work go to graduate school seeking higher degrees in public health, hospital administration, social planning, social work, law, business administration, sociology, and anthropology. Some move directly into careers in personnel work, social research, adult and juvenile probation, private and governmental social welfare agencies, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers two basic majors. The *sociology major* leads to either a bachelor of arts or bachelor of science degree and the *social work major* leads to a bachelor of arts degree. The Department also offers a minor in sociology.

The major in sociology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities. Within the sociology major there are nine concentrations which are largely interdisciplinary and which are built around a solid sociology core. The concentrations are: 1) Anabaptist and Pietist Studies; 2) Anthropology; 3) Applied Research; 4) Criminology; 5) Crosscultural Studies; 6) Human Resources Administration; 7) Human Services; 8) Organizational Processes and 9) Women's Studies.

The major in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. Courses and field experiences emphasize the distinctiveness and the similarity of various social service delivery systems. The program is accredited by the Council on Social Work Education.

The department also participates in the secondary education certification in social studies offering sociology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A *sociology major* requires an 18 hour core consisting of sociology 101, 202, 203, 330, 331, and 498 and the satisfactory defense of a senior thesis paper. (Mathematics 151 is also required for the major.) In addition the student must complete two elective sociology courses (6 hours), as well as one of the nine concentrations listed below for a total number of credit hours ranging from 36-42. The concentrations are:

Anabaptist and Pietist Studies (12 hours) requires Sociology 361, 362, 365, and 363 or 364 or 481; students are also required to take Sociology 317 as one of their major electives.

Anthropology (12 hours) requires Anthropology 202, 203, 360 and one elective Anthropology course.

Applied Research (12 hours) requires Mathematics 252, English 285C and Sociology 471 (6 credits).

Criminology (18 hours) requires Sociology 215, 342, and 471 (6 credits), Psychology 235 and Social Work 240.

Crosscultural Studies (12 hours) requires Anthropology 202 and 211, Political Science 301 and Economics 308 along with at least one semester of study abroad (courses taken abroad may be substituted for some of the required courses).

Human Resources Administration (18 hours) requires Sociology 233, 360 and 471 (6 credits) and Business Administration 265 and 467.

Human Services (18 hours) requires Social Work 222, 233, 240 and 329 and Sociology 471 (6 credits).

Organizational Processes (15 hours) requires Sociology 237 and 360, Business Administration 355, Computer Science 120, and English 285C.

Women's Studies (12 hours) requires Sociology 305, 355 and Psychology 370 (Psychology of Women), and English 357.

The **Sociology minor** requires 18 hours of course work including Sociology 101, 202, 203, 330, 331 and one elective course in sociology.

The **Social Work Major** requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. Two reference rating forms completed by persons who know the applicant well, and one completed by the applicant.
3. Formal admittance to Elizabethtown College and to the Social Work Program.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The social work major requires the following courses: Biology 105 and 106 or 108; Sociology 101; Psychology 105, 225; Political Science 117; Economics 101; Mathematics 151; Social Work 151, 233, 240, 275, 330, 367, 368, 369, 398, 401, 470, 471, 498; plus nine credits of professionally related courses directed toward the student's professional goal and approved by the social work advisor. Spanish is the language preferred to meet the core requirement.

Sociology

101 Introduction to Sociology

3 credits. (Core) Basic concepts and theories relating to the study of society with emphasis on fundamental sociological methods and approaches. Staff.

151 Introduction to Social Welfare (Social Work 151)

3 credits. (Core) The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service

agencies. *Prerequisites or corequisites:* Sociology 101, Psychology 105. Spring semester. Staff.

202 Sociological Theory

3 credits. (Core) An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, including structural-functionalism, Marxism and interactionism, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite:* Sociology 101. Fall semester. Prof. Kessler.

203 Social Organization

3 credits. (Core) A thorough analysis of the culture, structure, and change of contemporary industrial societies. Specific topics include the rational and nonrational bases of industrial society, work and leisure, politics, structured inequality and social movements. *Prerequisite:* Sociology 202 or permission of instructor. Spring semester. Prof. Kessler.

215 Criminology

3 credits. (Core) Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Fall semester. Prof. Kessler.

220 Race and Ethnic Relations

3 credits. (Core) Study of racial and other minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Staff.

233 Human Behavior in the Social Environment (Social Work 233)

3 credits. (Core) A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites:* Psychology 225, Sociology 101. Fall semester. Staff.

237 Group Dynamics

3 credits. (Core) A consideration of empirical research in group dynamics within the larger attempt to integrate a theoretical understanding of group dynamics with its experiential applications to everyday life. Staff.

301 Social Issues

3 credits. (Core) A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Prof. Kessler.

305 Marriage and the Family

3 credits. (Core) A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 Sociology of Religion

3 credits. (Core) An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

330 Methods of Social Research

(Political Science 330, Social Work 330)

3 credits. (Core) Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisites: Sociology 101, and Mathematics 151. Prerequisite or corequisite: Sociology 202.* Fall semester. Prof. Kraybill.

331 Social Statistics

3 credits. (Core) Application of the concepts of Mathematics 151, Probability and Statistics, to particular statistical procedures used in social research and analysis. *Prerequisite: Sociology 330, Political Science 330 or Social Work 330.* Spring semester. Prof. Kraybill.

339 Human Sexuality (Social Work 339)

3 credits. (Core) A study of sociosexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research, and selected issues. Prof. Iacono-Harris.

342 Modern Corrections

3 credits. (Core) An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Spring semester. Staff.

344 Aging: Social Response and Implications (Social Work 344)

3 credits. (Core) An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Staff.

355 Women in Society (Social Work 355)

3 credits. (Core) A sociological inquiry into the current status of women in society. Topics include the socialization process, the relationship between gender and social institutions, and feminist theory and research that explain the roles and status of women. Staff.

358 Sociology of War and Peace

3 credits. (Core) A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Prof. Kraybill.

360 Sociology of Complex Organizations

3 credits. (Core) An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Prof. Kessler.

361 Anabaptist and Pietist Groups Prior to 1850

3 credits. (Core) Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Prof. B. Hostetler.

362 Anabaptist and Pietist Groups Since 1850

3 credits. (Core) Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Prof. B. Hostetler.

363 Pacifism among Anabaptist and Pietist Groups, 1525-1985

3 credits. (Core) Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker-pacifist government, the pacifist comprises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth-century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Prof. B. Hostetler.

364 Amish Society

3 credits. (Core) An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society

3 credits. (Core) Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience, the course will be conducted as a seminar with the topics and groups varying by year. Prof. Kraybill.

366 Addiction and Society (Social Work 366)

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Staff.

371-380 Special Topics in Sociology

3 credits. (Core) Readings and discussion of topical areas of sociology. Topics may include, but not limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of instructor.* Staff.

481-490 Independent Study in Sociology

Variable credit. (Core) Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. (Core) The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of instructor.* Spring semester. Staff.

Social Work

151 Introduction to Social Welfare (Sociology 151)

3 credits. The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites: Sociology 101, Psychology 105.* Spring semester. Staff.

233 Human Behavior in the Social Environment (Sociology 233)

3 credits. A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Sociology 101, Psychology 225.* Fall semester. Staff.

240 Basic Helping Processes

3 credits. Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Iacono-Harris.

275 Rural Social Welfare Systems

3 credits. The development and organization of the rural community; its network of services designed to address community, family, and individual problems; community development and administration of social service programs. *Prerequisite: Social Work 151.* Spring semester. Staff.

330 Methods of Social Work Research (Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or corequisite: Mathematics 151.* Fall semester. Prof. Kraybill.

339 Human Sexuality (Sociology 339)

3 credits. A study of sociosexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Prof. Iacono-Harris.

344 Aging: Social Response and Implications (Sociology 344)

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Staff.

355 Women in Society (Sociology 355)

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social

institutions, and feminist theories that explain the needs and status of women. Staff.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Staff.

366 Addiction and Society (Sociology 366)

3 credits. (Core) An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Staff.

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 240.* Fall semester. Prof. Iacono-Harris.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367.* Spring semester. Prof. Iacono-Harris.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Corequisite: Social Work 368.* Spring semester. Prof. Iacono-Harris.

371-380 Special Topics in Social Work

3 credits. (Core) Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

398 Urban Social Welfare Systems

3 credits. On-site study of a large urban area with emphasis on urban social problems and social systems and on comparisons between urban and small town-rural areas. *Prerequisite: Social Work 275, or permission of instructor.* First summer session after junior year.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social, economic, and political systems. *Prerequisites: Social Work 327, Political Science 117, Economics 101.* Fall semester.

470 Introductory Field Instruction

3 credits. Supervised field instruction for at least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. Fall semester.

471 Advanced Field Instruction

14 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner.

Prerequisite: permission of instructor; corequisite: Social Work 498. Spring semester. Staff.

481-490 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite: Social Work 470; corequisite: Social Work 471.* Spring semester. Staff.

Anthropology

201 Physical Anthropology

3 credits. (Core) An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. Fall semester. Prof. Lehr.

202 Cultural Anthropology

3 credits. (Core) An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

211 World Cultures

3 credits. (Core) A survey of some of the peoples and cultures of the world from early times to the present with emphasis on physical, cultural, linguistic, and demographic factors. Fall semester. Prof. Lehr.

306 Indians of North America

3 credits. (Core) A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Prof. Lehr.

307 Peoples and Cultures of Africa

3 credits. (Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. (Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. (Core) Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Lehr.

371-380 Special Topics in Anthropology

3 credits. (Core) Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion,

anthropological theory, and the cultural history of Mexico. Prof. Lehr.

Spanish

See Department of Modern Languages, page 41.

Theatre

See Department of Fine and Performing Arts, page 36.

Interdisciplinary Programs

Premedical and Other Health Professions Programs

Martin O.L. Spangler (*Chair, Health Professions Advisory Committee*)

Members: James L. Dively, Fred Hoffman, Paul Peterson, Frank Polanowski, Zoe Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions schools and/or students. The *biology premedical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 12. A second route is the *bachelor of science degree in biochemistry* (see page 20). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown, he or she will follow a *curriculum similar to that outlined below*, with minor variations depending upon several factors, such as starting level in English and mathematics. After completion of the freshman year, all students should choose an

academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Six faculty are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into colleges of medicine; (2) to advise students on registration and preparation for medical college admission tests; (3) to assist students in the preparation and submission of applications to medical colleges; (4) to draft a composite letter of evaluation and endorsement for worthy candidates and to forward this information to the appropriate medical college admissions committees; (5) to offer assistance in preparing for medical college interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical college placement for advising and administrative purposes.

The premedical student will introduce himself to the Health Professions Advisory Committee early in his freshman year and will formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During March of the junior year, the *Committee* will hold *interviews* with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. During early April the student will again contact the Committee, this time to initiate the process of generating letters of recommendation and endorsement. Students are expected to solicit letters from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical college admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write let-

ters of evaluation, completing the application process himself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. This stage of the application process will culminate in mock interviews held between members and the premedical student. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that premedical students notify the Committee of changes in status of their applications so that the Committee can plan for this important stage of the admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

Representative First-Year Courses

<i>Credits</i>	<i>Fall Semester</i>
4	Biology 111
4	Chemistry 113
3	English*
4	Mathematics 121**
1	Physical Education
<i>Credits</i>	<i>Spring Semester</i>
4	Biology 112
4	Chemistry 114
3	English
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Interdisciplinary Program

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology major, and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University in Philadelphia. After completing 29 credits, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

For further details, contact Dr. Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a bachelor of science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's General Education Core in addition to courses in the student's major. The student also gains professional

training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the General Education Core requirements and accumulating at least 104 credits before transferring to Duke. The student spends at least two years at Duke's School of Forestry and Environmental Studies. In the first year and Environmental Studies. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional year, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentration in biology, business, and political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews.

There are variations of the schedule herein described. For further details, talk to Mr. Laughlin.

Majors shall complete all General Education Core requirements for the bachelor of science degree. Within the Core areas the following courses should be taken:

Mathematics Core (six hours): Mathematics 117, 151; 101, 121; or 121, 151. If 151 is not taken for Core, it is strongly recommended as an elective.

Science Core (eight hours): Majors with a concentration in biology should take chemistry; majors with concentrations in business or political science should take biology.

Social Science Core (nine hours): three of the nine hours must be in psychology or sociology/anthropology.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313-313L, 321, and two courses from Biology 215-215L, 235, 331, 332, or 347. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111, 112.

Business: Major concentration recommendations are Accounting 107, Computer Science 120 or 121, Economics 101, Business Administration 265, and either of the following two options: Accounting 108 and Economics 102, or Business Administration 331, 332. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120 or 121, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political 117, 118, 308, 471. Minor concentration recommenda-

tions are Political Science 308, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry 113, 114; Physics 101, 102, two courses from Earth Science 107, 108, 111; Mathematics 101-121, or 121-151, Psychology 105; Education 305, 225d, 310, 415, 225e, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113, 114, 213, 214; and eight hours from among Chemistry 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology 111, 112; two courses from Earth Science 111, 112, 115; Physics 101, 102; Mathematics 101, 121, 122; Psychology 105; Education 305, 225d, 310, 415, 225e, 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 204, 221, 241; one additional course in physics or drawing; two courses from Biology 105, 106, 108; Chemistry 101, 104; two courses from Earth Science, 111, 112, 115; Mathematics 101, 121, 122; Psychology 105; Education 305, 225d, 319, 415, 225e, 473.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social

studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are:

Students must take one 24-hour major, two nine-hour cognates, and two six-hour cognates. All students must take the professional education sequence: Psychology 105; Education 305, 225d, 415, 225e, and 473.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics. The nine-hour cognate comprises Economics 101, 102, and three elective hours in economics. The six-hour cognate comprises Economics 101, 102.

History: The 24-hour major must include History 105, 201, 202, 390, one European history beyond 105; one non-United States, non-European history; and six elective hours in history. The nine-hour cognate comprises History 105, 201, 202. The six-hour cognate comprises History 105, 202.

Political Science: The 24-hour major must include Political Science 117, 118, 202, 205, 301, either 308, 330, or a 340 topic, and six elective hours in political science. The nine-hour cognate comprises Political Science 117, 118, 205. The six-hour cognate comprises Political Science 117, 118.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 225, 235, 321, 322 and 370. The nine-hour cognate comprises Psychology 105 and six elective hours. The six-hour cognate includes Psychology 105 and three elective hours in psychology.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 201, 330, 332, Anthropology 202, and nine hours planned in consultation with and approved by the social studies advisers in the Departments of Sociology and Education. The nine-hour cognate comprises Sociology 101, 201, and Anthropology 202. The six-hour cognate comprises Sociology 101, Anthropology 202.

Education 305 Practicum in Secondary Education: Social Studies

4 credits. Experience with and demonstration of various styles and strategies in the teaching of social studies in the secondary school classroom; in-school observation and internship, or para-professional experience are a part of the course. *Prerequisite:* Psychology 105; *corequisite:* Education 225d.

International Studies

Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign cultures, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are just beginning to make themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The Business Department has an international studies concentration designed specifically for business majors. Details of this option can be obtained from the Business Department. The structure of the minor for all other majors consists of:

1. **Foreign language competency:** 6 semester hours in oral expression, textual analysis, and composition beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level 1 + on the ACTFL/ETS scale.
2. **Three required foundation courses** (9 hours):

An 211	World Cultures
Ec 307	International Economics* or
Ec 371	Economic Development* or
Ec 372	International Political Economy
	<i>(only one economics course may be selected)</i>
PS 205	International Relations
3. **Four elective courses** (12 hours) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 317	International Marketing
BA 371	International Business Management
Ec 308	Comparative Economic Systems
Ec 371	Economic Development
Ec 372	International Political Economy
Fr/Ge/Sp 311	Making of Modern Society
Fr/Ge/Sp 312A & 312B	Languages for the Professions
Hi 205	Modern Far East
Hi 206	English History since 1603 (Modern Britain)

Hi 220	History of Soviet Union
Hi 318	Age of Anxiety
Hi 323	History of China
Hi 324	History of Japan
Hi 327	History of Africa
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
PS 301	Comparative Governments
PS 305	American Foreign Policy
PS 342	Politics of Developing Nations
PS 413	United States Security Policy
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The director of International Studies (Professor Wayne Selcher) will help a student with course selections. Courses taken for this minor may be counted to fulfill the college graduation requirement in international education and for either Core or major requirements (but not both). Completion of the minor is indicated on a student's transcript.

Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Religion and Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; J.D., Elizabethtown College (1952-1984)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1949-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Universite, University of Paris (1966-1973)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

O. F. Stambaugh, *Professor of Chemistry Emeritus*
B.S., Lebanon Valley College; M.S., Ph.D., Pennsylvania State University (1946-1973)

Robert S. Young, *Director of Special Gifts Emeritus*
(1950-1984)

Carl W. Zeigler, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; M.Div., United Theological Seminary; D.D., Elizabethtown College (1959-1975)

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics* (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968)

I. L. Bossler, *Professor of Mathematics* (1968)
B.S., Ursinus College; M.S., Purdue University (1959)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion and Philosophy* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)

James L. Dively, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)

J. Thomas Dwyer, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)

John F. Harrison, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)

J. Robert Heckman, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)

Jack L. Hedrick, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963)

Frederic E. Hoffman, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)

A. F. Kish, *Professor of Business, Program Director, Continuing Education* (1968)
B.S., Rutgers-The State University; M.S., University of Delaware (1963)

Otis D. Kitchen, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)

Donald E. Koontz, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)

Donald B. Kraybill, *Professor of Sociology* (1984)
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)

J. Kenneth Kreider, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964)

Henry M. Libhart, *Professor of Art* (1972)
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967)

Richard L. Mumford, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)

Rollin E. Pepper, *Professor of Biology* (1968)
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964)

Zoe G. Proctor, *Professor of Chemistry* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

- William V. Puffenberger**, *Professor of Religion and Philosophy* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967)
- John P. Ranck**, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)
- D. Paul Rice**, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)
- Jobie E. Riley**, *Professor of Communications* (1980)
B.A., Manchester College; M.Div., Bethany Theological Seminary; Ph.D., Temple University (1961)
- Wayne A. Selcher**, *College Professor of International Studies, and Director of International Studies* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969)
- Ronald L. Shubert**, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)
- Carl N. Shull**, *Professor of Music* (1966)
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961)
- Martin O. L. Spangler**, *Professor of Chemistry* (1968)
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966)
- Stanley T. Sutphin**, *Professor of Religion and Philosophy* (1970)
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963)
- Bela Vassady, Jr.**, *Horace E. Raffensperger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)
- Thomas R. Winpenny**, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)
- Robert E. Ziegler**, *Professor of Science Education* (1972)
B.A., Bridgewater College; M.R.E., Bethany Theological Seminary; M.S., Ph.D., University of Wisconsin (1966)
- Stanley K. Bowers**, *Associate Professor of Education* (1973)
B.S., Millersville State College; M.Ed., Temple University (1965)
- Carl A. Callenbach**, *Associate Professor of Education* (1972)
B.S., Pennsylvania State University; M.A., Appalachian State University; Ed.D., Pennsylvania State University (1972)
- John F. Cyranski**, *Associate Professor of Physics and Earth Science* (1986)
B.S., Worcester Polytechnic Institute; Ph.D., University of Wisconsin-Milwaukee (1986)
- Uldis Daiga**, *Associate Professor of Modern Languages* (1973)
B.S., University of North Carolina; M.A., Temple University (1965)
- Paul M. Dennis**, *Associate Professor of Psychology* (1973)
B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)
- Robert D. Dolan**, *Associate Professor of Mathematics, Clinical Professor in Mathematics Education* (1970)
B.S., California State College; M.A., West Virginia University (1964)
- Darrell R. Douglas**, *Associate Professor of Music* (1972)
B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972)
- Leonard A. Eiserer**, *Associate Professor of Psychology* (1986)
B.A., University of Maine; M.A., Ph.D., Bryn Mawr College (1981)
- Delbert W. Ellsworth**, *Associate Professor of Psychology* (1970)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)
- Martha A. Eppley**, *Associate Professor of Economics* (1971) *Associate Dean of the Faculty for Student Academic Matters* (1979)
B.S., Elizabethtown College; M.B.A., Indiana University (1964)
- Hugh G. Evans, Jr.**, *Associate Professor of Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania State University (1968)
- Boyd Fox**, *Associate Professor of Education* (1973)
B.S., M.S., Ed.D., Utah State University (1970)
- George A. Gliptis**, *Associate Professor of Business* (1972)
B.S., J.D., University of Virginia (1970)
- Suzanne Schmidt Goodling**, *Associate Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury College (1964)
- David Iacono-Harris**, *Associate Professor of Social Work, Director of Social Work Program* (1982)
B.A., St. Francis College; M.S.S.W., University of Wisconsin; Ph.D., University of Tennessee (1978)
- Maurice R. Hoppie**, *Associate Professor of Economics* (1987)
B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)
- Jacqueline L. Jones**, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign (1987)
- John E. Koontz, Jr.**, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)
- Carroll H. Kreider**, *Associate Professor of Business and Clinical Professor of Business Education* (1978)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)
- Ronald L. Laughlin**, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)
- Thomas R. Leap**, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)
- R. Bruce Lehr**, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)
- J. Henry Long**, *Associate Professor of Sociology* (1978), and *Coordinator of Academic Computing* (1986)
B.S., Elizabethtown College; M.A., Temple University; B.D., D.D., Bethany Theological Seminary (1969)
- Robert C. Moore**, *Associate Professor of Communications* (1983)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983)
- Robert K. Morse**, *Associate Professor of Mathematics* (1971)
B.S., Franklin and Marshall College; M.A., Temple University (1968)
- Stanley R. Neyer**, *Associate Professor of Business* (1972)
B.S., Elizabethtown College; M.B.A., Shippensburg State College; C.P.A. (1964)
- D. Kenneth Ober**, *Associate Professor of Physical Education, and Athletic Director* (1972)
B.S., M.S., West Chester State College (1964)

Associate Professors

Louise Baugher Black, *Associate Professor of English, Clinical Professor in English Education, and Director of Developmental Studies* (1977)
B.S., Elizabethtown College; M.S., Temple University (1968)

Frank P. Polanowski, Associate Professor of Biology (1981)
B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)

H. Marshall Pomroy, Associate Professor of Business (1971)
B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)

H. Herbert Poole, Jr., Associate Professor of History (1982)
B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969)

Raymond R. Reeder, Associate Professor of Chemistry (1973)
B.S., Case Institute of Technology; Ph.D., Brown University (1969)

John Rohrkemper, Associate Professor of English (1987)
B.A., M.A., Ph.D., Michigan State University (1981)

Elisabeth D. Shaw Russell, Associate Professor of English (1972)
B.A., M.A., Oxford University (1969)

Carmine T. Sarracino, Associate Professor of English (1984)
B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973)

Charles D. Schaeffer, Jr., Associate Professor of Chemistry (1981)
B.A., Franklin and Marshall College; Ph.D., State University of New York at Albany (1976)

Harry L. Simmers, Associate Professor of Music (1971)
B.S., Bridgewater College; M.M., American Conservatory of Music (1966)

Donald E. Smith, Associate Professor of Communications (1973)
B.S., M.S., State University of New York College at Geneseo (1969)

John W. Stites, Associate Professor of Music (1976)
B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, Associate Professor of Business (1987)
B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut (1987)

Glenn H. Thompson, Jr., Associate Professor of Earth Science (1973)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)

Randolph L. Trostle, Associate Professor of Business (1984)
B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)

Julia Watson, Associate Professor of English (1987)
B.A., M.A., Ph.D., University of California at Irvine (1987)

Richard M. Zugarek, Associate Professor of Computer Science (1981)
B.S., M. Phil., Leicester Polytechnic (U.K.) (1981)

Assistant Professors

Elaine M. Ainsworth, Assistant Professor of Occupational Therapy (1986)
B.S., Edinboro State College; M.S., Columbia University (1986)

Cecelia Benelli, Assistant Professor of Education (1985)
B.S., M.Ed., Ph.D., Pennsylvania State University (1985)

Cynthia Beyerlein, Assistant Professor of Business and Director of the Small Business Center (1985)
B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)

J. Sue Dolan, Assistant Professor of Business (1980)
B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

Carol Jackson Frey, Assistant Professor of Occupational Therapy (1986)
B.S., University of Illinois-Chicago; M.Ed., University of Toledo (1986)

Robert B. Garrett, Assistant Professor of Health and Physical Education (1967)
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967)

Andrew F. Hill, Assistant Professor of Business (1986)
B.A., Parsons College; M.B.A., Case Western Reserve University (1986)

Carole A. Huber, Assistant Professor of English (1983)
B.A., M.A., Southeast Missouri State University; Ph.D., Texas Christian University (1983)

Timothy J. Hudson, Assistant Professor of Communications (1985)
B.A., M.A., Eastern New Mexico University (1985)

Yvonne E. Kauffman, Assistant Professor of Physical Education (1972)
B.S., Bridgewater College; M.Ed., West Chester State College (1966)

J. Matthew Kessler, Assistant Professor of Sociology (1984)
B.A., University of Nebraska at Lincoln; M.A., Ball State University; Ph.D., Virginia Polytechnic Institute and State University (1984)

Anthony M. Matteo, Assistant Professor of Religion and Philosophy, and Coordinator in Continuing Education (1986)
B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

E. Fletcher McClellan, Assistant Professor of Political Science (1982)
B.A., Franklin and Marshall College; M.A., East Tennessee State University (1982)

W. Wesley McDonald, Assistant Professor of Political Science (1986)
B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)

James J. Moyer, Assistant Professor of Business (1986)
B.S., Dickinson College; M.Letters, University of Pittsburgh (1986)

Donald G. Muston, Assistant Professor of Business (1977)
B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Kerry C. Painter, Assistant Professor of Computer Science (1986)
B.A., University of Hawaii; M.S., Drexel University (1986)

Paul Petersen, Assistant Professor of Occupational Therapy (1984)
B.S., Syracuse University; M.A., New York University; Ph.D., University of Nebraska at Lincoln (1984)

Jenny H. Shinn, Assistant Professor of Music (1986)
B.A., Ewha University; M.A., Teachers' College, Columbia University; M.Ed., Columbia University (1986)

Donald P. Smith, Assistant Professor of Physical Education (1972)
B.S., University of Mississippi (1954-64, 1972)

John A. Teske, Assistant Professor of Psychology (1986)
B.A., Indiana University; M.A., Ph.D., Clark University (1986)

Sharon R. Trachte, Assistant Professor of Modern Languages (1986)
B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)

Barbara C. Tulley, Assistant Professor of Computer Science (1981)
B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Hans Erik-Wennberg, Assistant Professor of Communications and Director of Instructional Services (1984)
B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Joseph A. Whitmore, Assistant Professor of Physical Education (1977)
B.A., Bridgewater College (1968)

Instructors

Daniel S. Chiang, Instructor in Computer Science (1987)
B.S., Tamsui Oxford College; M.Acc., East Tennessee State University; M.S., Alabama A&M University (1987)

Milton Friedly, Instructor of Art (1987)
A.A., Northwest Community College; B.F.A., Arizona State University; M.F.A., University of Wyoming (1987)

Arthur D. Roderick, III, Instructor in Physical Education (1984)
B.S., Elizabethtown College (1984)

Cathy K. Zanowski, Instructor in Occupational Therapy (1985)
B.S., Elizabethtown College (1985)

Adjunct Faculty

On Campus

Susan L. Anthony, Department of Communications
B.S., Kutztown State College; M.A., Pennsylvania State University

David D. Bailey, Department of Business
A.A., Lehigh County Community College; B.B.A., Pennsylvania State University

Virginia B. Bates, Department of Modern Languages
B.A., Southern Illinois University; M.A., University of California at Los Angeles

Joseph E. Dreiss, Department of Psychology
B.A., Manhattan College; M.A., Columbia University; Ph.D., Duquesne University

Marcia L. Englar, Department of Fine and Performing Arts
B.M., B.M.E., Augustana College; M.M., Peabody Conservatory of The Johns Hopkins University

Lynn D. Engle, Department of Fine and Performing Arts
B.S., Elizabethtown College

David Ferruzza, Department of Physics and Earth Science
B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology

Elizabeth M. Gardner, Department of English
B.A., Bates College; M.L.A., The Johns Hopkins University

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A.A., Harrisburg Area Community College

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B.So.Sc., Pennsylvania State University; M.S.W., University of Michigan

Linda M. Metz, Department of Music
B.M.E., East Carolina University
M.M.P., Kent State University

Candace H. O'Donnell, Department of English
B.A., Washington University; M.A., Millersville State College

Debra D. Ronning-Seyler, Department of Music
B.S., M.A., Indiana University of Pennsylvania

Margaret B. Shaffer, Department of Business
A.B., Muhlenberg College; C.P.A.

Laurie A. Showers, Department of Computer Science
B.S., Elizabethtown College

Joanne Stauffer, Department of Business
B.A., Millersville State College; M.A., Miami University

Carol S. Weavill, Department of Computer Science
B.S., Elizabethtown College

Off Campus

Medical Technology

Margaret Black, Polyclinic Medical Center, Harrisburg, Pa.
B.S., Lebanon Valley College; M.T. (ASCP)

Sharon Deitrich, Reading Hospital and Medical Center, West Reading, Pa.
B.S., Kutztown University

John W. Eiman, Abington Memorial Hospital, Abington, Pa.
M.D., University of Pennsylvania School of Medicine

Edward Eisenhower, St. Joseph Hospital, Lancaster, Pa.
M.D., Medical University of South Carolina

Gerald Fahs, Lancaster General Hospital, Lancaster, Pa.
M.D., Temple University School of Medicine

Janice Fogleman, Harrisburg Hospital, Harrisburg, Pa.
M.Ed., Pennsylvania State University; M.T. (ASCP)

Nadine Gladfelter, Lancaster General Hospital, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Susan Herr, St. Joseph Hospital, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Brenda Kile, York Hospital, York, Pa.
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, Harrisburg Hospital, Harrisburg, Pa.
M.D., Airlangga University School of Medicine

Elissa Passiment, Monmouth Medical Center, Long Branch, N.J.
B.S., M.Ed., State University of New York at Buffalo M.T. (ASCP); CLS (NCA)

Julian W. Potok, Polyclinic Medical Center, Harrisburg, Pa.
D.O., Philadelphia College of Osteopathic Medicine

Barbara Scheelje, Abington Memorial Hospital, Abington, Pa.
B.S., Colby-Sawyer College; M.T. (ASCP)

I. Donald Stuard, Reading Hospital and Medical Center, West Reading, Pa.
M.D., University of Rochester School of Medicine

John P. Whiteley, York Hospital, York, Pa.
M.D., Temple University School of Medicine

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M.S.W., University of Pittsburgh

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B.A., Elizabethtown College

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M.S.W., Temple University

James Fuddy, *Elizabethtown Hospital and Rehabilitation Center, Elizabethtown, Pa.*
M.S.W., University of Pennsylvania

William Heffner, *Social Work Service, VA Hospital, Lebanon, Pa.*
M.S.W., University of Pittsburgh

Delene Iacono-Harris, *Elizabethtown Hospital and Rehabilitation Center*
M.S.S.W., University of Tennessee

Kevin Jacoby, *Elizabethtown Hospital and Rehabilitation Center, Elizabethtown, Pa.*
M.S.W., University of Maryland

William Kantor, *Social Work Service, VA Hospital, Lebanon, Pa.*
M.S.W., Case Western Reserve University

Rebecca Kennedy, *Holy Spirit Hospital, Camp Hill, Pa.*
M.S.W., Virginia Commonwealth University

Janice Lehr, *Pennsylvania Chapter, National Association of Social Workers, Harrisburg, Pa.*
M.S.W., West Virginia University

Pamela McDermott, *Hershey Medical Center, Hershey, Pa.*
M.S.W., University of Michigan

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M.S.W., Marywood College

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M.S.W., Washington University; J.D., Temple University

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M.S.W., University of Pennsylvania

Hubert Peterson, *Social Service Department, Harrisburg Hospital, Harrisburg, Pa.*
M.S.W., University of Illinois

Gary Shuey, *Cumberland County Children's Services, Carlisle, Pa.*
M.S.W., Marywood College

Joan Soop, *Keystone Residence, Inc., Harrisburg, Pa.*
M.E., Shippensburg State College

Claudia Stephens, *Masonic Homes, Elizabethtown, Pa.*
B.A., Elizabethtown College

Stephen J. Suknaic, *Dauphin County Juvenile Probation*
M.S., Shippensburg State College

Glenda Trumpower, *Social Services Department, Hershey Medical Center, Pennsylvania State University, Hershey, Pa.*
M.S.S.A., Applied School of Social Sciences, Case Western Reserve University

Martin Yespe, *Crisis Intervention, Harrisburg, Pa.*
M.S.W., University of Maryland

Psychology

Ralph Norgran, *Department of Psychology, Hershey Medical Center, Pennsylvania State University, Hershey, Pa.*

A.B., University of Pennsylvania,
A.M., University of Michigan,
Ph.D. University of Michigan

Clinical Education Centers: Occupational Therapy

Abington Memorial Hospital
Abington, Pa.

Adult Day Care
Hellam, Pa.

All Saints Hospital
Wyndmoor, Pa.

Allentown State Hospital
Allentown, Pa.

Allied Services for the Handicapped
Scranton, Pa.

Betty Bacharach Rehabilitation Center
Pomona, N.J.

Baltimore City Hospital
Baltimore, Md.

Bergen Pines County Hospital
Paramus, N.J.

Bryn Mawr Rehabilitation Hospital
Malvern, Pa.

Carlisle Hospital
Carlisle, Pa.

Chambersburg Hospital
Chambersburg, Pa.

Coatesville VA Medical Center
Coatesville, Pa.

Colonial Manor
York, Pa.

Community Hospital of Lancaster
Lancaster, Pa.

Eagleville Hospital and Rehabilitation Center
Eagleville, Pa.

Eastern Pennsylvania Psychiatric Institute
Philadelphia, Pa.

Easton Hospital
Easton, Pa.

Elizabethtown Hospital and Rehabilitation Center of the Pennsylvania State University
Elizabethtown, Pa.

Ephrata Community Hospital
Ephrata, Pa.

Eugenia Hospital
Lafayette Hills, Pa.

Fallston General Hospital
Fallston, Md.

Fort Howard VA Medical Center
Fort Howard, Md.

Garden State Rehabilitation Center
Toms River, N.J.

Geisinger-Wyoming Valley Medical Center
Wilkes-Barre, Pa.

Good Samaritan Hospital
Baltimore, Md.

Good Samaritan Hospital
Lebanon, Pa.

Good Shepherd Home & Rehabilitation Hospital
Allentown, Pa.

Harrisburg Institute of Psychiatry
Harrisburg, Pa.

Harrisburg Hospital Community Mental Health Center
Harrisburg, Pa.

Harrisburg Polyclinic Medical Center
Harrisburg, Pa.

Harrisburg State Hospital
Harrisburg, Pa.

Harmarville Rehabilitation Center
Pittsburgh, Pa.

Haverford State Hospital
Haverford, Pa.

Heatherbank Rehabilitation Center
Columbia, Pa.

Hershey Medical Center
Hershey, Pa.

Highland Health Facility
Baltimore, Md.

Hillside Hospital
Glen Oaks, N.Y.

Holy Spirit Hospital & Mental Health Center
Camp Hill, Pa.

Hospital of the University of Pennsylvania
Philadelphia, Pa.

Institute of Pennsylvania Hospital
Philadelphia, Pa.

Johns Hopkins Hospital of Baltimore
Baltimore, Md.

Kessler Institute for Rehabilitation
West Orange, N.J.

Lancaster General Hospital
Lancaster, Pa.

Leading Nursing and Rehabilitation Center
Harrisburg, Pa.

Lebanon VA Medical Center
Lebanon, Pa.

Magee Rehabilitation Hospital
Philadelphia, Pa.

Marlboro State Hospital
Marlboro, N.J.

Maryland General Hospital
Baltimore, Md.

Mercy Hospital
Pittsburgh, Pa.

Montebello Hospital
Baltimore, Md.

Muhlenberg Medical Center
Plainfield, N.J.

Norristown State Hospital
Norristown, Pa.

North Virginia Mental Health Institute
Falls Church, Va.

New York University—
Cornell Medical Center
White Plains, N.Y.

Options
Lancaster, Pa.

Our Lady of Lourdes Hospital
Camden, N.J.

Philadelphia Psychiatric Center
Philadelphia, Pa.

Philadelphia VA Medical Center
Philadelphia, Pa.

Philhaven Hospital
Lebanon, Pa.

Pottstown Memorial Hospital
Pottstown, Pa.

Reading Hospital & Medical Center
West Reading, Pa.

Reading Hospital Day Treatment Center
West Reading, Pa.

Reading Rehabilitation Hospital
Reading, Pa.

Rehabilitation Hospital for Special
Services
Mechanicsburg, Pa.

Rehabilitation Hospital for Special
Services
York, Pa.

Rockland Psychiatric Center
Orangeburg, N.Y.

Saint Francis General Hospital
Pittsburgh, Pa.

Saint John's Hospital
Pittsburgh, Pa.

Saint Joseph Hospital
Lancaster, Pa.

Saint Joseph Hospital
Reading, Pa.

Saint Lawrence Rehabilitation Center
Lawrenceville, N.J.

Saint Vincent's Hospital and Medical
Center
New York, N.Y.

Sinai Hospital
Baltimore, Md.

Springfield Hospital Center
Sykesville, Md.

Temple University Hospital
Philadelphia, Pa.

The Sheppard and Enoch Pratt Hospital
Baltimore, Md.

Thomas Jefferson University Hospital
Philadelphia, Pa.

Trenton Psychiatric Hospital
West Trenton, N.J.

Washington County Hospital
Association
Hagerstown, Md.

Williamsport Hospital
Williamsport, Pa.

The Administration

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President
Ph.D., University of Chicago

Robert L. Odean
*Executive Assistant to the President
and Secretary of the College*
M.Div., Northern Baptist
Theological Seminary

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Director of College Relations
A.B., Colgate University

Kenneth A. Baylor
Director of Public Information
B.A., Marshall College

Arthur F. George III
*Assistant Director of Public
Information*
B.A., Elizabethtown College

Martha A. Farver-Apgar
Director of Personnel

Academic Affairs

Frederick F. Ritsch
Provost and Dean of the Faculty
Ph.D., University of Virginia

Martha A. Eppley
*Associate Dean of the Faculty for Stu-
dent Academic Matters*
M.B.A., Indiana University

Shirley A. Deichert
Director of the Learning Center
M.S., Temple University

Nelson P. Bard, Jr.
Director of the Library
Ph.D., University of Virginia

E. Margaret Gabel
*Assistant to the Director of the
Library and Head Cataloguer*
M.S., L.S., Syracuse University

Sylvia M. Tiffany
Reader's Services Librarian
M.S., L.S., North Carolina Central
University

Gordon McK. Bateman
Director of Financial Aid
M.S., Indiana University

Mary Frances Woodall
Assistant Director of Financial Aid
M.Ed., University of Pittsburgh

David B. Conway
Director of Admissions
M.A., Temple University

Linda K. DeMora
Associate Director of Admissions
B.S., Elizabethtown College

Susan E. Cupit, B.A.,
Elizabethtown College

Erik L. Enters, B.A., Lebanon
Valley College

Mark A. Stanley, B.A., York
College of Pennsylvania
Admissions Counselors

Gloria Bittner Hay
Director of Continuing Education
Ph.D., University of Wisconsin

A. F. Kish
*Director of the Adult External Degree
Program*
M.S., University of Delaware

Martha A. Eppley
Registrar
M.B.A., Indiana University

Gloria F. Hess
Associate Registrar
B.S., Lebanon Valley College

John J. Marisic
*Director of Operations, and
Administrative Computing
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B.A., The Johns Hopkins University

Business Affairs

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Treasurer
M.B.A., University of Pittsburgh

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Grounds*
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B.S., Elizabethtown College

Keith M. Marks
Bookstore Manager

Mary Weidman
Assistant Bookstore Manager
A.A., Buffalo State University

Tana L. Parrett
Director of Conferences
B.S., Elizabethtown College

William E. Whitman
Director of Public Safety
B.S., West Chester State College

Student Affairs

Walter B. Shaw
Dean of the College
Ph.D., Michigan State University

James R. Hilton, Sr.
Associate Dean of the College for Student Services and Director, Career Development Center
M.S., Shippensburg State College

Patricia J. Austin
Chaplain and Counselor
Ed.D., Temple University

Beverly V. Piscitelli
Counselor and Coordinator of Advising Services
M.S., University of Bridgeport;
N.C.C.

Ginger S. Groff
Director of the Health Center
R.N., Harrisburg Polytechnic
Clinic Hospital

Jo Anne Ramsey
Staff Nurse/Education Program Specialist
R.N., B.S., Elizabethtown College,
M.S.W., University of Maryland

Royal E. Snively
Counselor
M.A., Ohio State University

Dennis M. Murphy
Assistant Dean of the College for Residence Life
Ph.D., Indiana University

Susan L. Boyd
Director of Housing
M.S., University of Hartford

H. Andrew Sagar III
Assistant Dean of the College for Student Life
Ph.D., University of Pittsburgh

D. Kenneth Ober
Director of Athletics
M.S., West Chester State College

Institutional Advancement

Mary Beth Leymaster Matteo
Vice President for Institutional Advancement
B.A., Temple University

Julie A. Myers
*Associate Director of Development/
Director of Independent Gifts*
B.S., Towson University

Patricia A. Formisano
*Assistant Director of Development
and Director of the Annual Fund*
B.S., Towson University

Patrick J. Hall
*Associate Director of Development/
Director of Corporate and Foundation Relations*
M.A., Fordham University

J. Mark Bushong
Director of Planned Giving and Church Relations

Joseph S. Burman
Researcher/Writer
M.A., Temple University

Jerald L. Garland
Director of Alumni Relations
M.S., Temple University

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Library Assistant in Readers' Services
M.S., Drexel University

Nevin O. Garner
Associate Director of Data Processing Services

Alice L. Knouse
Paraprofessional in Business
B.S., Elizabethtown College

Patricia A. March
Assistant to the Director of Housing

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*Administrative Secretary to the Vice
President for Institutional Advancement*

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Patricia G. Stepanchak, R.N., B.S.
Staff Nurse

Steven M. Rutter
Electronics Engineer
A.S., Electronics Institute

Carol H. Warfel
Library Assistant
M.A., Indiana University of
Pennsylvania

Janet I. Waser
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Food Services Manager
B.S., Pennsylvania State University



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Samuel S. Wenger
Paradise, Pennsylvania
Attorney (retired)

Note: year indicates expiration of term.

Calendar 1988-89

Fall Semester

August	22-26	Faculty Meetings and Orientation
	27	Freshmen Arrive
	29	Registration Day; Evening Classes Begin at 6:30 p.m.
September	30	Day Classes Begin, 8:00 a.m.
	5	Labor Day — No Classes
	6	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	24	Parents Day
	7-9	Fall Break — No Classes
	19	Mid-Term
	22	Homecoming
November	23	Friday Schedule of Day Classes; Classes End at 5 p.m.
	24-27	Thanksgiving Recess
	28	Classes Resume 8:00 a.m.
December	9	Classes End
	12-17	Final Examinations

Spring Semester

January	9-13	Faculty Meetings and In-Service Programs
	16	Registration Day
	17	Classes Begin, 8:00 a.m.
March	3	Mid-Term
	4-12	Spring Break — No Classes
	13	Classes Resume, 8:00 a.m.
	23	Easter Recess Begins 5:00 p.m.
	27	Evening Classes Resume at 6:30 p.m.
	28	Day Classes Resume 8:00 a.m.
		Monday Schedule of Day Classes
May	5	Classes End
	8-13	Final Examinations
	20	86th Commencement

Summer Sessions

May 22-June 23	Summer Session I
June 26-July 28	Summer Session II
June 12-July 28	Evening Summer Session

Index

- Academic dismissal, 9
- Academic honors, 10
- Academic load, 6
- Academic majors, 3
- Academic probation, 9
- Academic program:
 - Core requirements, 3
 - degrees offered, 3
 - individual program adjustments, 6
 - majors, 3
- Academic Standing, 9
- Accounting, 16; see Department of Business, 15
- Administration, 67
- Advanced placement, 10
- Allied Health, 59
- Anthropology, 53; see Department of Sociology/Anthropology/Social Work, 53
- Applied music and ensembles, 35
- Art, 32
- Attendance in class, 9
- Auditing courses, 8

- Biology, Department of, 12
- Board of Trustees, 69
- Brethren Colleges Abroad Program, 5
- Business, Department of, 15
- Business Administration, 17; see Department of Business, 15
- Business Education, 18; see Department of Business, 15

- Calendar, Cover II (1988-89, Page 70)
- Challenge testing, 10
- Chemistry, Department of, 20
- Class standing, 8
- CLEP Examinations
- College Scholars, 10
- Communications, Department of, 22
- Computer Science, Department of, 25
- Continuing education, 11
- Core, General Education, 3
- Credits, 7; by examination, 10; class standing, 8; graduation, 6; transfer, 11

- Dance, 32; see Department of Fine and Performing Arts, 32
- Dean's List, 10
- Degrees offered, 3
- Departmental student privilege, 10
- Developmental Studies, 11
- Directed Study, 5
- Directory, 62; adjunct faculty, 65; administrative staff, 67; faculty, 62; trustees, 69
- Dismissal, academic, 9
- Drawing, 48; see Department of Physics and Earth Science, 46

- Earth Science, 48; see Department of Physics and Earth Science, 46
- Economics, 19; see Department of Business, 15

- Education, Department of, 28; see individual departmental secondary education certification requirements; biology, 12; chemistry, 20; general science, 60; physics, 46; social studies, 60
- Engineering, 46; see Preengineering English, Department of, 29

- Faculty, 62; adjunct, 65; emeriti, 62
- Fine and Performing Arts, 32
- Foreign study, 5
- Forestry and Environmental Management Program, 59
- French, 41; see Department of Modern Languages, 6
- Full-time status, 6

- General Education Core, see Core
- General Science Certification, 60
- German, 51; see Department of Modern Languages, 8
- Grades, 8
- Grade Point Average, 7
- Graduation, with honors, 7; 10
- Graduation requirements, 6

- Health, 45; see Department of Physical Education and Health
- Health Care, 20; see Department of Business, 15
- Health Professions Advisory Committee, 51
- History, Department of, 37
- Honors, graduation, 7
- Honors courses, 4; 10

- Independent study, 5
- Incomplete grades, 8
- Interdisciplinary programs, 57
- International Education Graduation Requirements, 4
- International Studies Minor, 61
- Internships, 6

- Joint institution programs, 5

- Leave of absence, 11

- Majors, list of academic, 3
- Mathematical Sciences, Department of, 38
- Medical Technology Programs, 20; see Department of Chemistry
- Minors, list of academic, 3
- Mission statement, 2
- Modern Languages, Department of 41
- Music, 32
- Music education, 32; see Department Fine and Performing Arts
- Music therapy, 33; see Department of Fine and Performing Arts

- Occupational Therapy, Department of, 42
- Off-Campus Study, 5
- Overload credits, 6
- Pass/No pass grading, 8
- Part-time status, 6
- Philosophy, 52; see Department of Religion and Philosophy, 51

- Physical Education and Health, Department of, 45
- Physics and Earth Science, Department of, 46
- Political Science, Department of, 48
- Preengineering, 5, 46; see Department of Physics and Earth Science, 46
- Preforestry, 5
- Preallied Health Programs, 6
- Premedical: program, 57 and Allied Health Program, 59
- Prenursing
- Pre-registration, 7
- Probation, academic, 9
- Professional writing, 29; see Department of English
- Program Variations, options, 4; 6
- Psychology, Department of, 50
- Purpose, Statement of, 2

- Quality points, 8

- Rank in class, 8
- Readmission, 9
- Registration, 7
- Religion and Philosophy, Department of, 51
- Repeating courses, 8

- Scholar's privilege, 10
- Social Studies Certification, 60
- Social Work, 53; see Department of Sociology/Anthropology/Social Work
- Sociology/Anthropology/Social Work, Department of, 53
- Spanish, 41; see Department of Modern Languages, 8
- Special studies, 4
- Study abroad, 5
- Statement of Purpose, 2

- Theatre, 36; see Department of Fine and Performing Arts
- Transfer credits, 11
- Trustees, 69
- Tutorials, 5

- Withdraw: from classes, 9; from the College, 9
- Writing Competency Requirement, 3

Elizabethtown COLLEGE



1988-89 Academic Program



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Calendar 1988-89

Fall Semester

August	22-26	Faculty Meetings and Orientation
	27	Freshmen Arrive
	29	Registration Day; Evening Classes Begin at 6:30 p.m.
September	30	Day Classes Begin, 8:00 a.m.
	5	Labor Day — No Classes
	6	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	24	Parents Day
	7-9	Fall Break — No Classes
	19	Mid-Term
November	22	Homecoming
	23	Friday Schedule of Day Classes; Classes End at 5 p.m.
	24-27	Thanksgiving Recess
December	28	Classes Resume 8:00 a.m.
	9	Classes End
	12-17	Final Examinations

Spring Semester

January	9-13	Faculty Meetings and In-Service Programs
	16	Registration Day
	17	Classes Begin, 8:00 a.m.
March	3	Mid-Term
	4-12	Spring Break — No Classes
	13	Classes Resume, 8:00 a.m.
	23	Easter Recess Begins 5:00 p.m.
	27	Evening Classes Resume at 6:30 p.m.
	28	Day Classes Resume 8:00 a.m.
May		Monday Schedule of Day Classes
	5	Classes End
	8-13	Final Examinations
	20	86th Commencement

Summer Sessions

May 22-June 23	Summer Session I
June 26-July 28	Summer Session II
June 12-July 28	Evening Summer Session

Elizabethtown College is accredited by the Middle States Association of Colleges and Secondary Schools.

The policies and provisions contained in this catalog are subject to the right of the trustees, administration, and faculty to repeal, change, or amend them at any time.

The provisions of this booklet are not to be regarded as an irrevocable contract between Elizabethtown College and the student or between the College and the parents or guardians of the students.

Elizabethtown College complies with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable, federal, state, and local statutes, ordinances, and regulations. Elizabethtown College does not illegally discriminate against students, prospective students, employees, or prospective employees on the basis of race, color, religion, ethnic or national origin, personal handicap, age, or sex.

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The Academic Program



Contents

Statement of Purpose The Academic Program Course Descriptions

Accounting	19
Anthropology	52
Biology	16
Business	18
Chemistry	22
Communications	24
Computer Science	26
Education	28
English	30
Fine And Performing Arts	32
(Art, Dance, Music, Theatre)	
History	36

Mathematical Sciences	37
Modern Languages	39
(French, German, Spanish)	
Occupational Therapy	40
Philosophy	42
Physical Education And Health	43
Physics And Pre-Engineering	44
Political Science	46
Psychology	47
Religion	48
Sociology, Social Work And Anthropology	49
Interdisciplinary Programs	52
Directory	57
Index	67

1988-1989
Elizabethtown College

Elizabethtown, Pennsylvania 17022-2298

Zug Memorial Library
Elizabethtown College
Elizabethtown, Pa.

Statement of Purpose of Elizabethtown College

Elizabethtown College aims to prepare men and women capable of sound intellectual judgment, with a keen moral sense, and a full appreciation for the beautiful in our world. In keeping with its Brethren tradition, and in affirmation of the values of peace, justice, and human dignity which are rooted in this tradition, the College strives to achieve a union between the world of work and the world of spirit. Proud of its past, the College is moving confidently toward the 21st Century, committed to excellence, demanding the best of everyone, yet always sensitive to personal needs.

The purpose of Elizabethtown College has historically been expressed in the phrase, "Educate for service." Students learn to serve their fellow human beings through an educational process designed to foster the development of maturity, the capacity of independent judgment and a commitment to personal integrity. In being true to its past, Elizabethtown College is alive to its future.

The College affirms a relationship between those academic disciplines which primarily prepare students with the mental skills and specialized knowledge to undertake successful personal careers in business, industry, and the professions; and those disciplines which primarily foster the

knowledge of cultural heritage, the ability to communicate effectively, the capacity for long-term and continuous self-education for reflective moral and spiritual powers of mind, and for a deep sense of personal integrity.

Ideally, Elizabethtown College graduates should be able to serve themselves and others freely and responsibly in an environment characterized by social, cultural, ethical, spiritual, and physical uncertainties. The College seeks to foster that balanced pragmatic mixture of professional and humanistic studies that has historically characterized liberally educated men and women.

The achievement of ideal balance of curricular studies for undergraduate students depends upon diversity of intellectual inquiry and outlook by both teachers and students within the disciplines represented in its curriculum, and upon variety of responsible expression of scholarly opinion. The College welcomes a mixture of students of varied ages, backgrounds, traditions, interests and needs, as these can be accommodated within the existing curriculum. It commits itself to fostering excellence in educational achievement and to strengthening intellectual curiosity.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of at least 128 semester hours of credit, a grade point average of at least 2.00 in the major, a grade point average of at least 2.00 overall, and the completion of all requirements of the major and the General Education Core.

The College offers four additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, the Associate of Arts, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B.S.
Business Administration, B.S.
Business Education (Business), B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Early Childhood Education, B.S.
Economics (Business), B.A., B.S.
Elementary Education, B.S.
Engineering (Physics and Earth Science), B.A.
English, B.A.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages, B.A. (French, German, Spanish)
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.
Occupational Therapy, B.S.
Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A., B.S.
Religion, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work (Sociology), B.A.
Sociology, B.A., B.S.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Art
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Computer Science
Economics (Business)
English
History
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Philosophy
Physics
Political Science
Psychology
Religion
Sociology
Statistics

The Writing Competency Requirement

An incoming freshman whose record fails to demonstrate basic language skills and writing ability is required to take either (1) English 101 (Basic English) followed by English 102 (Expository Writing) or (2) English 102. A student who demonstrates a high level of proficiency in language and writing skills is permitted to proceed directly to English 105 (Introduction to Literature).

No credit is granted for English 101 if it is taken after the successful completion of English 102.

The General Education Core

Through the General Education Core curriculum, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to pursue a general comprehensive education which complements both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: prescribed individual course requirements and area distribution requirements in which students may choose from approved courses within the general prescribed academic area. (Approved courses are identified in the course listings.)

Alternatives to the Core curriculum, or deviations from it, must be approved in advance by the Academic Standing Committee.

Core Area Requirements

Area	B.A. Hours	B.S. Hours
Literature	6	6
Complete English 105 and one other course from among the English, French, Spanish, or German literature courses. Note: courses in composition, literary criticism, history of the language, professional writing, or the teaching of English do not fulfill the literature Core requirement.		
Modern Language	5	*
Complete Modern Language 112 or demonstrate competence at that level by taking a placement test. All students with more than one year of high school language study must take the placement test. Depending on language background and test results, students may merit exemption from Modern Language 112 and enroll in upper-level language courses, or take Modern Language 112 for credit and fulfill the language requirement, or take Modern Language 111 and 112 for credit and fulfill the requirement.		
<i>*Some majors require a language for a bachelor of science degree; students should check the program description in this catalog.</i>		
Foreign students whose degree or major requires a modern foreign language and whose native language is not English may have this requirement waived. The waiver requires: (1) successful completion of En 105 (and En 101 and/or En 102) and an upper level literature course, (2) written petition to the Academic Standing Committee by the student and advisor, and (3) written documentation to the Committee verifying the student's verbal and written fluency in a language or languages other than English.		
Fine Arts	3	3
Complete three hours in selected art, theater, or music courses.		
Religion or Philosophy	6	6
Complete the required hours in philosophy and/or religion courses. <i>Note: Only one of Religion 215 or Philosophy 115 may be used toward the requirement.</i>		
History	6	6
Complete History 105 and one other history course.		
Social Science	9	9
Complete the required hours in economics, political science, psychology, anthropology, and sociology courses. <i>Note: History does not fulfill this requirement, nor does Social Work. Majors in economics, political science, psychology and sociology must select courses outside their major department. Business majors not pursuing a concentration in economics may use upper-level economics courses to fulfill this requirement.</i>		
Mathematics	3	6
Complete the required hours in mathematics courses. <i>Note: Mathematics 011 does not fulfill the mathematics Core</i>		

requirement or count toward credit for graduation. Mathematics 211 and 212 fulfill core requirements only for elementary and early childhood education majors.

Science	8	8
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Complete the required hours from among biology, chemistry, physics, and earth science courses. Students must take the associated laboratory if the course is to count for Core.

Physical Education	4	4
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Complete four activity courses, including at least one but not more than two aquatics activities. Physical Education 270 counts as three hours toward graduation, but fulfills only one credit toward Core. Physical Education 150, 160, 260 count for Core credit only once each. Physical Education 285 does not fulfill any part of this requirement. No more than six physical education credits may be counted for graduation. Course titles may not be repeated.

No student who passes a swimming course may take the swimming proficiency test for credit. If more than one Aquatics course is taken, it must advance in difficulty.

A **swimming proficiency test** must be taken no later than the fall of the sophomore year. This test may be taken only once. A transfer student who desires to take the test must do so at the beginning of the student's first semester.

College Requirement

Area	B.A. Hours	B.S. Hours
International Education	6	6
All students must take a minimum of six semester hours of course work above the 100 level in foreign cultures or international affairs, contemporary or historical. This requirement can be met with courses taken in the Core, major, minor, or elective areas.		
The following courses have been designated to fulfill this requirement.		
Anthropology 202, 211, 307, 308.		
Business Administration 317, 371.		
Communications 372.		
Economics 307, 308, 371, 372.		
English 327, 328, 329.		
History 205, 216, 217, 218, 219, 220, 223, 224, 327, 328.		
Modern Foreign Languages (French, German, Spanish) 112, 211, 212, 311, 312.		
Political Science 205, 301, 342.		
Religion 221, 222.		

The International Relations Committee will consider other 370 courses as they are offered and submitted to the committee.

Program Variations and Options

In addition to the majors and minors indicated above, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus

opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

HONORS COURSES

Each year outstanding freshmen are invited into several honors courses in the General Education Program. Enrollments are limited to fifteen students each, thus allowing greater opportunity for student participation in class discussion. Honors courses are designated with an "H" preceding the course number on the semester schedule.

SPECIAL STUDIES

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued; securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Registrar at the beginning of the semester during which it will be completed. Application forms for Independent Study are available at the Registrar's Office.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional tuition charge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 18 hours as a result of the Directed Study registration are charged the current part-time rate for tuition for those hours in excess of 18, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: Students must register for Directed Studies and Tutorials prior to beginning course work. Registration forms are available in the Registrar's Office.

Off-Campus Study

STUDY ABROAD

The College participates in programs offering study abroad in Germany, France, Spain, China, and England.

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering a junior year of study in Germany, France, China, or Spain. Students may study at Phillips-Universität, Marburg/Lahn, West Germany; at the University of Strasbourg, France; at the University of Barcelona, Spain; or at Dalian Institute of Foreign Languages, Dalian, China. A wide selection of courses is offered in the social sciences and the humanities. Students are given intensive language instruction prior to the opening of the university semesters.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of the second year of German in college and have approximately a *B* average. Although most students bound for France or Spain must also have completed the equivalent of two college years of French or Spanish, outstanding students who have completed the first year of language study will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country. The credits earned abroad are transferred toward the degree at Elizabethtown. A faculty adviser is in residence in Europe during the year.

The program accommodates about 25 students at each university; Elizabethtown College has a quota of three or four for each. Interested students should confer with Dr. J. Kenneth Kreider, BCA Program Coordinator, and their major adviser.

As part of the BCA program, the College offers a semester in England. Students attend full-time at St. Mary's College, Cheltenham, England, where they enroll in a Seminar in British Culture and Education, and select an additional three or four courses. Credit for these courses is applied toward the degree at Elizabethtown College. Fall semester students depart in early September and return before Christmas; spring semester students depart in late January and return in late May. For information, contact Dr. Kreider.

JOINT INSTITUTION PROGRAMS

In these programs students study at the College and at affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: preforestry with Duke University; preengineering with Pennsylvania State University; biology health professions and preallied health with Thomas Jefferson University.

In the **Preforestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Preengineering is a 3-2 program with Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of work in an engineering field, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from Pennsylvania State University. For further details, see the description in the Physics Department listing of the catalog.

The **Biology Health Professions** major is a 3-2 program with Thomas Jefferson University College of Allied Health Sciences. The student spends three years at the College; after a year at Thomas Jefferson, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional upper division program results in the awarding of a bachelor of science degree from Thomas Jefferson University. For further details, consult the Biology Department listing.

In the **Preallied Health** programs, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Biology Department listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students's education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Music, Chemistry, Occupational Therapy, and Sociology/Anthropology/Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the Registrar or Department Chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the General Education Core, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Student Responsibilities

Students are expected to consult with their academic advisor(s) as to course selection, course sequences, graduation requirements, etc. Pre-registration and drop and add request forms require the major advisor's signature. The signature indicates that the student has consulted with the advisor; *however, responsibility for meeting graduation requirements remains with the student.*

Checksheets for academic majors and minors are available in the Registrar's Office. These are helpful in noting the completion of program requirements. In addition, courses included in the major or minor GPA are noted; and a suggested sequence of study is provided for majors.

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor may dismiss a student from a course for excessive absences. A student may appeal for reinstatement to the Academic Standing Committee.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors and minors. Students are expected to consult with these advisors in regard to course selection, course sequence and graduation requirements.

Declarations and changes of majors and minors are facilitated in the Center for Counseling and Student Development. When a change of major or minor occurs, records are transferred from one department to another; however, the student must initiate the change in the Center.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported to the Registrar's Office immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Full-time/part-time status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking 11 or fewer hours per semester pays the regular semester hour rate plus

applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credit hours per semester to be eligible for intercollegiate athletic competition.

In a summer session, students holding a Pennsylvania Higher Education Assistance Agency (PHEAA) grant are considered full-time if they carry a minimum of 12 semester hours divided among the terms. Tuition and fees are paid according to the schedule in the summer session brochure. For further details concerning summer session, consult the summer session brochure available from the Registrar's or Continuing Education offices.

Course Load

Since the completion of at least 128 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of at least 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

A student with average grades may carry up to 18 semester hours of work in any given semester except the summer session, when the maximum is 14 semester hours for the 10-week period. A student who has achieved a cumulative grade point average of 3.00 or above may carry up to 20 semester hours credit in a semester, or 16 semester hours credit in a summer session. For each semester hour above 18 for which a student is enrolled in a given semester, an additional fee is charged, and approval by the Associate Dean of the Faculty is required. Students who wish to petition for an overload should obtain a form in the Registrar's office.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Registrar's Office. Failure to do so will result in a duplication of hours carried, a possible delay in graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated follow:

1. A student may repeat any course in which the student receives an *F* or *NP*.
2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's adviser and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a course that is prerequisite to a General Education Core requirement. The student must repeat the course in which the

D grade was received within one year of the original enrollment in the class (or the next semester in which the course is offered if the course is offered less frequently than once a year).

3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit is determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the Provost, who will direct warranted appeals to the Academic Standing Committee.

Meal Exchange For Resident Students

Resident students should attempt to choose classes which allow them to eat in the dining hall at regularly scheduled meal times. If, however, an unavoidable situation arises in which the class schedule conflicts with a mealtime, the student is entitled to a \$3 meal exchange at the Jay's Nest. Arrangements must be made through the Registrar's Office during the meal exchange week, as announced on the "Important Dates" sheet.

No exchanges will be authorized for conflicts that are not of an academic nature. Also, no exchange will be issued if the problem can be resolved by changing sections in one or more courses causing the conflict. Requests will only be processed during the meal exchange week.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. In addition, students who are close to completion of graduation requirements may petition for permission to participate in the May graduation ceremonies. (Close to completion normally means "not in excess of nine credit-hours of course work." Under no circumstances will approval be given for more than twelve credit-hours of work.) Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work will participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed on the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit internship.

Credit Requirements

To receive a bachelor of arts or bachelor of science degree from Elizabethtown College, the student must earn at least 128 semester hours credit or 130 semester hours if Mathematics 011 was completed. In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the course outline (see departmental listings for specific information).

Program Requirements

Students are required to successfully complete all requirements of the major, all of the General Education core requirements, and The College International Education requirement. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a quality point-credit ratio of at least 2.00, with a minimum average of 2.00 in a major (and a 2.00 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have a ratio of at least 2.00 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in

the major, at least eight of which are at the upper level (normally 300 and 400 level), and 2) at least 30 of the last 60 credits.

Note: Credits earned at the University Center in Harrisburg, at the West Shore site in Camp Hill, or in the BCA program while the student is matriculated at the College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the catalog dated four years prior to graduation, or by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine requirements for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the Registrar by February 15.

Early Participation

Petitions for early participation in the May graduation ceremony must be presented in writing to the Registrar by February 15 and must include the reason(s) for the request and supporting rationale. The Registrar, in consultation with the Provost, will decide each case on its individual merit. Approval is not automatic. Early participants are identified by a special notation in the Commencement program.

Diplomas are distributed to early participants at the next appropriate graduation date following actual completion of all work required for graduation. The student must contact the Registrar's Office to request the diploma, indicating the address to which the diploma is to be sent.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a nondegree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is no guarantee that a student will be regis-

tered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit for the next semester. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the adviser. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of Continuing Education for details about registration.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Registrar's Office.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds must be approved by the academic adviser and completed through the Registrar's Office. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Registrar's Office. The completed form must be signed by the academic advisor and returned to the Registrar's Office; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Registrar's Office. The completed form must be signed by the academic advisor and returned to the Registrar's Office; the course drop is not complete until this is done.

Voluntary Withdrawal from College and Classes

Withdrawal from college

Full-time students withdraw from the College through the Center for Counseling and Student Development; part-time students withdraw through the Registrar's Office. For purposes of billing, room reservation, and academic responsibility, the effective date of withdrawal is the date on which the completed official notice is returned to the Center for Counseling and Student Development or the Registrar's Office. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstance. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Withdrawal from classes

Students withdraw from classes through the Registrar's Office. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of *W* or *W/F*. All withdrawals after the end of the eleventh week of the semester receive grades of *W/F* unless the withdrawal from College is for medical reasons, in which case a *W* is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of *W/F* is calculated into the student average as though it were an *F*.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	Non-Pass (failure)
AUD	Audit

Quality Points

A 4-point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester Hour of Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Incomplete Grades

A grade of I may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of I are assigned for extenuating circumstances only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the I in cases of suspected academic dishonesty.

All grades of I received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of F.

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their required physical education courses on a pass/no pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).
2. The cumulative average must be 2.75 or higher.
3. The selected course may carry no more than four semester hours of credit and must be a free elective. It must be outside the major or minor department, may not satisfy a Core requirement, and may not be a course required by the major or minor.

4. No more than four courses in total (excluding physical education) may be taken under this grading option.

Pass/No Pass registration forms are available in the Registrar's Office. Once a course is registered under the Pass/No Pass option, it may not be changed. Grades of D- or higher are recorded as Pass; grades of F are recorded as Non-Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying D or F grades in 100 or 200 level courses at the end of the fifth week of the semester are notified of their deficient performance. Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits a junior; with 90 credits a senior.

Rank in Class

The student's rank in class at graduation is based on the credits, grades, and quality points earned at Elizabethtown College.

Grade Appeals

Questions concerning grades should be called to the attention of the professor immediately after the official grade report is received from the Registrar's Office.

PROCEDURES FOR GRADE APPEALS

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.

2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal. A request for the meeting must be submitted within thirty days of the date on which the grades are formally issued from the Office of the Registrar.

3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision.

4. The student will have the alternative, within ten days of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the provost.

5. The provost will review the detail of the appeal. The Academic Review Board will hear warranted appeals as determined by the provost.

Grade Point Average Calculation

The grade point average is dependent upon the credit hours attempted and the quality points accumulated. To determine the grade point average for a semester multiply the credit hours for each course by the quality points for the grade earned in the course, sum the quality points for the semester, and divide the total quality points by the total credits attempted for the semester. Courses in which a grade *F* or *WF* is received are included in the calculation. Courses in which a grade of *W* is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester GPA. For the major GPA, use all courses in the major department and all courses required for the major. For the minor GPA, use all courses in the minor department and all courses required for the minor.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

<i>Semester hours</i>		<i>Cumulative Grade Point Average</i>
<i>Attempted</i>	<i>with</i>	<i>below:</i>
1-18		1.70
19-36		1.80
37-54		1.90
55-72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses per term.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is on academic probation. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) or on academic probation may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence from the College of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the Registrar.

Academic Honors

Dean's List

A full-time student who earns a quality point-credit ratio of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

Students who have earned at least 60 credits at Elizabethtown College and have attained a 3.75 cumulative quality point average are recognized as College Scholars for the succeeding academic year. They are awarded a special certificate and their status as College Scholars is recorded on their permanent records.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative quality point-credit ratio of 3.50 is graduated *cum laude*; a ratio of 3.75, *magna cum laude*; a ratio of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria includes, but is not limited to, the following: the student must have a minimum G.P.A. of 3.5 in the major/minor and overall cum; possess outstanding abilities in areas such as research projects or papers, etc. and have pursued academically rigorous courses in the particular discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's Honor List during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis.

Honors Courses

Each year outstanding freshmen are invited into several honors courses of the General Education Program. Enrollments are limited to fifteen students each, thus allowing greater opportunity for student participation in class discussion.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or better on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in progress at the time of the examination.
- For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Four of these credits may be applied to the General Education Core requirements in science.
- For the examination in English Composition, Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the General Education Core requirements.
- For the Mathematics Examination, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the General Education Core requirement in mathematics.

2. Subject Examinations

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty. There are two types of Challenge Tests: Tests for Academic Credit and Tests for Placement and/or Waiver.

Tests for Academic Credit are of two kinds: *Proficiency Tests* such as the swimming proficiency test; and the *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option.

Tests for Placement and/or Waiver comprise tests such as those given for placement in English, modern languages, or mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Challenge Tests given at the initiative of the College are administered without fee to the student; and there is no tuition charged for any academic credit awarded as a result of college-initiated testing.

There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a Test for Academic Credit is \$50; the fee for a Test for Placement and/or Waiver is \$25. In addition, appropriate tuition is charged for academic credit awarded as a result of student initiated Challenge Tests; the charge is 50% of the appropriate part-time tuition rate in effect at the time the test is administered.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Registrar's Office. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C- or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior to* enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the Registrar. Students must request the Registrar's Office of the transferring institution to send an official transcript to the Registrar's Office at Elizabethtown College.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Registrar's Office, in person or by mail, at least one week prior to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/professional schools or for employment. Two copies of the final record are also available free to each student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Registrar's Office at least one week prior to the date needed. Federal law requires that all requests must be made in writing *by the student*. Telephone requests cannot be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Registrar's Office; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.
2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Leave of Absence

A student may take a leave of absence from the College to study abroad in the BCA program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Any administration fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$200 deposit must be returned to the Registrar's Office by May 1 or December 1 to ensure a place in the College and in the courses selected.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature are assumed by the Academic Standing Committee and the Academic Review Board.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Center for Counseling and Student Development, who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Board is comprised of three faculty members, two students, and one faculty member or administrator appointed by the president. The provost serves as convener of the board but he is not a member and does not vote in decisions made by the board. The board handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard To Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments.

With Regard To Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.
2. To request a hearing before the Academic Review Board when found by a faculty member to be in violation of the standards of academic integrity and to receive a written statement from that board summarizing the findings of the board and its disposition of the matter.
3. To request a hearing before the Academic Review Board when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.
4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably in academic matters and conduct themselves accordingly.

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of course assignments as well. Elizabethtown College uses *Sources: Their Use and Acknowledgment*, Hanover, N.H.: Dartmouth College, 1962, as the reference work on the subject of plagiarism; the booklet is available in the College Bookstore or the College Library and is provided to all new students as a part of orientation.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information for an assignment when such information is not appropriate for the assignment. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of

academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of *F* in the course and possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.
2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have another person in attendance, also.
3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A copy of this notification is sent to the Office of the Provost.
4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Board. The request for a hearing must be presented in writing to the provost within five days of receipt of the notice of information.

Academic Dismissal

The provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is the provost's judgment that academic dismissal is appropriate, he will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.

The student will have the option of accepting the provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the Academic Standing Committee within five days of receipt of the provost's decision.

Developmental Studies

As part of Elizabethtown College's efforts to make a college education available to students with diverse talents, the Developmental Studies Program is designed for the moti-

vated student with academic potential, but with less-than-adequate education credentials (SAT scores, high school grades, and/or class rank).

The Developmental Studies Program offers students several thrusts. First, it provides the student with a strong advising support system, through which assistance is readily available on all phases of college life. Second, the students take *Introduction to College**, a course which develops a sense of responsibility in the students for their own college experience. Third, program advisors serve as advocates for the serious, motivated student.

For freshmen only, the Developmental Studies Program exists to help the student make the transition from high school to college.

***DS 171 Introduction to College**

3 credits. Designed to provide an opportunity for students to learn and adopt methods to promote their success in college. Topics cover strengthening skills in time management, test-taking, written and verbal report presentation, notetaking and listening, improving interpersonal communication and locating resources to help with personal, health, and academic concerns.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. *WELCOME BACK*, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the University Center in Harrisburg and at Trinity High School in Camp Hill.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisors to develop individualized study plans leading to associate, bachelor of professional studies, or bachelor of liberal studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to meet the external degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September, 1987, Dr. Ernest L. Boyer, president of the Carnegie Foundation for the Advancement of Teaching and Senior Fellow at the Woodrow Wilson School at Princeton University, spoke on "The Undergraduate College Experience in America."

Lecture Series

Three lectures are sponsored at Elizabethtown College through which national and international leaders speak on political, ethical, social, and economic topics of major importance. In 1987-88, the lectures were offered as part of a central theme, "Between the Summits: An Assessment of East-West Relations."

The lectures are:

The Frank S. Carper Lecture on Ethics, Business and the Profession is an endowed lectureship named in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The speaker in April, 1988, was James O. Pickard, Secretary of Commerce in Pennsylvania from 1982-86 and the chief executive officer of Globus Group, Inc., York, Pennsylvania. His topic was "The Pennsylvania Business Community: Partners for Peace."

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in honor of the late John F. Chubb of the Class of 1961 who was a trustee of Elizabethtown College, and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown.

The Honorable Willy Brandt, chancellor of the Federal Republic of Germany from 1969 to 1974, and the recipient of the Nobel Prize for Peace in 1971, spoke in April, 1988, on "The Politics of Enemies: Perestroika and New Options for the West."

The President's Lecture, first held in March, 1988, is a forum for a person of national or international reputation to speak on a contemporary issue. The theme in 1988 was World Peace.

Dr. Stephan Eisel, deputy director of the Office of Chancellor Helmut Kohl of the Federal Republic of Germany, spoke on "Changing East-West Relations: The West European Response."

College Assembly

The series, popularly known as "Monday at 10," is a dedicated period on most Monday mornings throughout the academic year when people from diverse experiences discuss contemporary issues, or present cultural programs such as concerts, dramatic readings, and mime.

The series is planned to expand and enhance students' awareness of their culture, history, and environment.

Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text, and the reader is there referred to the appropriate department.

Accounting

See Department of Business, page 18, 19.

Anthropology

See Department of Sociology/Anthropology/Social Work, page 49.

Department of Biology

Professors Hoffman (Chair), Dively, Heckman, Pepper
Associate Professors Laughlin, Polanowski

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The curriculum, leading to a Bachelor of Science in Biology, prepares students for the rigors of graduate school and professional schools of medicine, and for biologically-oriented employment opportunities.

The department involves students in research studies with professors through senior seminar and independent study projects.

The Department of Biology offers a choice of four majors leading to a bachelor of science. In addition, the department offers a biology minor and two programs leading to receipt of a degree from cooperating institutions.

The Bachelor of Science: Biology Major prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 412, and 12 additional hours in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 121, 151; and a foreign language through the 112 level or Computer Science 121 and 122.

The Bachelor of Science: Biology Major/Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Biology Major/Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University. The specific requirements are Biology 111, 112, 201, 202, 202L, and eight additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 101, 121; and Computer Science 120. In addition, nursing students must take Communications 301 and Physical Therapy students must take English 285B. In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University in Philadelphia. After completing 29 credits at Thomas Jefferson University, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Biology Secondary Education prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the *biology major* (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, and one course selected from 321 or 324-324L, and nine additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 121, 151; Psychology 105; Education 305, 225d, 225e, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

The Bachelor of Science: General Science Secondary Education Major enables the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Dr. Hoffman.

The Biology Minor provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 or 105-105L; one course from 112, 106-106L, or 108-108L; 212 or 215-215L; one course from 201, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 19 or 20, depending on whether Biology 212 is taken. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Hoffman from the Biology Department should work with the student and the student's major advisor.

The Biology Preforestry Program offers a biology concentration in the five-year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Biology Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University for the junior and senior years. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs.

105 Principles of Biological Science

3 credits. (Core) Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. **Corequisite:** (to satisfy Core) **Biology 105L** (may not be taken for credit after completing Biology 111). Staff.

105L Principles of Biological Science Laboratory

1 credit. (Core) Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106 Genetics, Evolution, and Man

3 credits. (Core) Designed for the nonbiology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. *Corequisite: (to satisfy Core) Biology 106L.* Spring semester. Staff.

106L Genetics, Evolution, and Man Laboratory

1 credit. (Core) A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106.* Spring semester. Staff.

108 Man and His Environment

3 credits. (Core) Designed for the nonbiology major. Discussion of basic principles of environmental interrelationships and a consideration of specific problem areas such as pollution, radiation, and population growth with regard to those principles. *Corequisite: (to satisfy Core) Biology 108L.* Prof. Laughlin.

108L Man and His Environment Laboratory

1 credit. (Core) Includes field trips to water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Prerequisite or corequisite: Biology 108.* Prof. Laughlin.

111 General Biology

4 credits. (Core) The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses beyond Biology 112. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit after completing Biology 105 without permission of instructor.* Staff.

112 General Biology

4 credits. (Core) The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology III.* Spring semester. Staff.

201 Human Anatomy

4 credits. (Core) A study of human structure at the tissue, organ, and system levels. Particular attention given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology III, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. (Core) A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology III, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. (Core) A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

212 Molecular Biology

3 credits. (Core) An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. (Core) A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor.* Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit (Core) Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215.* Fall semester. Prof. Heckman.

222 Immunology

3 credits. (Elective) A basic course in immunology encompassing immunity, serology, immunochemistry and immunobiology. Considered antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology 112 or permission of instructor.* Spring, alternate years. Prof. Polanowski.

235 General Microbiology

4 credits. (Core) A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 104 or 114, or permission of instructor.* Spring semester. Prof. Pepper

311 Biological Instrumentation and Research Methodology

4 credits. (Core) A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Prof. Pepper.

313 General Ecology

3 credits. (Core) The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor.* Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. (Core) Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313.* Fall semester. Prof. Laughlin.

321 Plant Physiology

4 credits. (Core) A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 104 or 114; or permission of instructor.* Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. (Core) A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. (Core) An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. (Core) A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. (Core) Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. (Core) A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112*. Fall semester. Prof. Dively.

342 Development and Evolution

3 credits. (Core) A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215*. Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. (Core) A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112*. Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. (Core) A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of instructor*. Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. (Core) A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114*. Offered upon demand. Prof. Pepper.

370-379 Special Topics in Biology

Variable credit. (Core) Courses of a specialized nature reflecting the interests of the instructor. Courses offered on a random basis. Staff.

380-389 Directed Study in Biology Topics

Variable credit. (Core) Directed study in biological areas in which the student meets regularly with the instructor on an individual basis. Laboratory work may include self-directing aids. *Prerequisite: permission of instructor*. Staff.

412 Seminar in Biology

2 credits. (Core) An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311*. Spring semester. Staff.

480-489 Independent Problems in Biology

Variable credit. (Core) Designed to allow the student to do independent research in some phase of biology. *Prerequisites: 16 credits in biology, permission of instructor and Department Chair*. Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Psychology 105; corequisite: Education 225d*. Fall, alternate years. Prof. Hoffman.

Department of Business

Professor Buffenmyer, Fazzi

Associate Professors Evans, Gliptis, Hoppie, C. Kreider, Neyer,

Pomroy, Stone (*Chair*), Trostle

Assistant Professors Beyerlein, S. Dolan (*Associate Chair*), Hill, Moyer, Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations and in academic institutions. The department's goal is to offer students a broad understanding of the nature of business and its role in soci-

ety, and to provide the foundation for graduate study, continuing self-education, and personal development.

The Department of Business offers four majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the General Education Core, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrating in one or more of seven areas: *accounting, business education, computer science/business information systems, economics, finance, management, or marketing*. A student may also select a secondary area of concentration in *communications, international business, or health science*.

Business administration students may also major in forestry and environmental studies. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Science in Business Education. For students who plan to teach in the business department of a secondary school, the business education curriculum provides a liberal training in courses outside the field of business, a broad background in business, depth in at least two certification areas in business, and professional education. The professional training is conducted by personnel who have been secondary business teachers and who maintain an awareness of current developments through close relationships with business departments in area high schools and vocational-technical schools.

Bachelor of Arts or Science in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. The elective courses should be tailored to the student's area of interest, in consultation with the department advisor.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 101, BA 265, BA 330, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Accounting

A major in accounting includes Accounting 105, 106 (Ac 107-108 may be substituted), 205, 206, 305, 306, 12 additional semester hours in accounting; Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151.

Business Administration

A major in business administration includes Accounting 107, 108, (Ac 105-106 may be substituted); Business Administration 215, 248, 265, 325, 330, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration.

For an **Accounting Concentration**, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A **Business Education Concentration** requires keyboarding pro-

iciency, Business Education 305, 421; Education 225d; and the completion of one of four options: accounting, computer science, marketing, or secretarial. A *Computer Science/Business Information Systems Concentration* requires Computer Science 121, 135, 335, 340. An *Economics Concentration* requires Economics 301, 302, and two other economics courses. A *Finance Concentration* requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The *Management Concentration* requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 311, 498, and two other marketing courses from the departmental advising sheet.

A *Secondary Concentration in International Business* requires competency at the 112 level in a modern language, Anthropology 211, Political Science 205, Economics 307, and two other courses from the departmental advising sheet. A *Secondary Concentration in Health Science* requires four additional courses from biology and/or chemistry according to the departmental advising sheet. A *Secondary Concentration in Communications* requires Communications 105, English 185, and three other courses from the departmental advising sheet.

Business Education

A major in business education includes Accounting 105, 106; Business Administration 215, 248, 265, 325, 331, 330 or 332, 355; Business Education, 421; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151; Psychology 105; and the professional education program for secondary certification: Education 308, 309, 415; Business Education 305, 473 (Education 305, 473). Each student must choose two or more of the following certification areas: accounting, computer science, marketing, secretarial, office technologies. Speech proficiency is also required.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics; Computer Science 120, Mathematics 121, 131, and 151; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may *not* enroll in Accounting 107 or 108 unless the department specifically allows them to do so. Likewise, students who complete 107 may *not* enroll in 105 or 106. The proper course sequence is either 105–106, or 107–108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite: Accounting 105.* Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Fall semester. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite: Accounting 107.* Spring semester. Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite: Accounting 106 or permission of the instructor.* Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite: Accounting 205.* Spring semester. Prof. Neyer.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites: Accounting 301, 206 or permission of the instructor.* Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite: Accounting 106 or 108; or permission of the instructor.* Fall semester. Prof. Beyerlein.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite: Accounting 305.* Spring semester. Prof. Beyerlein.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite: Accounting 106 or 108.* Spring semester. Prof. Neyer.

370–379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite: Accounting 206.* Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite: Accounting 206.* Fall semester. Prof. Pomroy.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites: Accounting 302, 405, 406; or permission of the instructor.* Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite: approval of the department chair.* Prof. Fazzi.

480–489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites: approval of the department chair and the Provost.*

499 Seminar in Accounting

3 credits. A study of selected topics currently under discussion in the accounting field. A major research project is required. Offered upon student demand and faculty availability. *Prerequisite: permission of the instructor.* Spring semester.

Business Administration

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. *Prerequisite: or corequisite: Economics 102.* Profs. Hill, Moyer.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business; includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisites: Mathematics 151, 117.* Profs. Beyerlein, Trostle.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites: Business Administration 215, Mathematics 151.* Fall semester. Staff.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisite: Business Administration 215 or permission of the instructor.* Spring semester. Prof. Moyer.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites: Business Administration 215, 265.* Fall semester. Prof. Moyer.

316 Marketing Management

3 credits. The formulation of marketing policies and the planning techniques for embodying these policies in marketing programs. Case analysis is stressed. *Prerequisites: Business Administration 215, 248, 265.* Spring semester. Staff.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite: Business Administration 215.* Fall semester. Prof. Buffenmyer.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite: Accounting 106 or 108.* Profs. Beyerlein, Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Fall semester. Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Fall/Spring (beginning 1989). Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of the instructor.* Spring semester. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Profs. Hill, C. Kreider.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites: Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

370-379 Special Topics

3 credits. Topics and problems of current relevance in business.

371 International Business Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite: Business Administration 265.* Prof. Buffenmyer.

375 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during and after a purchase. Emphasis is on understanding and predicting the individual's consumption patterns so that effective marketing strategies can be developed. *Prerequisite: Business Administration 215.* Fall semester. Prof. Moyer.

377 Fundamentals of Materials Management

3 credits. An overview to the field of materials management and physical distribution. Topics covered include all materials management functions; production planning and scheduling, inventory control, market analysis, materials handling, procurement transportation, warehousing and physical distribution. *Prerequisites: Ac 108, Ec 102, Business Administration 265, Ma 151, or permission of the instructor.* Fall semester. Staff.

378 Purchasing Management

3 credits. A basic overview of the purchasing function. Topics covered include organization of purchasing, policies and procedures, sourcing, negotiations, make or buy, legal considerations, quality control, procurement of capital equipment, impact of computerization, and vendor evaluation. *Prerequisites: Business Administration 377, BA 248, CS 120, BA 331, or permission of the instructor.* Spring semester. Staff.

379 Inventory Management and Forecasting

3 credits. A conceptual foundation and understanding of forecasting methodology for the materials function in operations; various inventory management systems, considering the problems of changes and constraints on inventory structures, inventory control procedures, accounting aspects, physical control, and simulation as an inventory modeling tool. *Prerequisites: Business Administration 378, or permission of the instructor.* Staff.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite: Business Administration 325.* Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite: Business Administration 325.* Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites: Business Administration 248, 369; Economics 102.* Spring semester. Staff.

467 Personnel Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite: Business Administration 265.* Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite: Business Administration 369 or permission of the instructor.* Fall semester. Prof. Muston.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite: approval of department chair.* Prof. Fazzi.

480–489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites: approval of the department chair and the Provost.*

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisites: senior status and permission of the instructor.* Prof. Muston.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites: Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor.* Spring semester. Staff.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites: Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor.* Profs. Buffenmyer, Muston.

Business Education

101 Elementary Gregg Shorthand

3 credits. Introduction to Gregg Shorthand Series 90; instruction in theory, and in reading and writing shorthand rapidly and accurately. For students with no training in shorthand. Fall semester. Prof. S. Dolan.

111 Document Processing I

3 credits. A brief introduction to keyboarding with a greater emphasis upon formatting techniques utilizing the microcomputer and a word processing software application. Fall semester. Prof. C. Kreider.

201 Intermediate Gregg Shorthand

3 credits. An intensive study of Gregg Shorthand Series 90; emphasis upon developing the student's ability to take dictation on unfamiliar material rapidly and to transcribe accurately. *Prerequisites: Business Education 101, 111; or permission of the instructor.* Spring semester. Prof. S. Dolan.

211 Document Processing II

3 credits. A concentrated study utilizing the microcomputer and a word processing application, with an emphasis upon advanced formatting and editing of business letters, special communication forms, executive communications, and application forms. *Prerequisite: BED 111 or permission of the instructor.* Spring semester. Prof. C. Kreider.

301 Advanced Gregg Shorthand

1 credit. The study of methods and materials used in teaching shorthand in the secondary school. Enrollment limited to business education students. *Prerequisites: Business Education 201, 211; or permission of the instructor.* Prof. S. Dolan.

305 Practicum in Secondary Education: Business

(Education 305)

4 credits. Instructional methodology of business education and in-school experience integrated under the guidance of a clinical professor representing the academic major. *Prerequisite: Psychology 105; corequisite: Education 308.* Fall, 1988. Profs. S. Dolan, C. Kreider.

311 Advanced Document Processing

1 credit. Methods and materials used in teaching document processing in the secondary school. Enrollment limited to business education and business administration (business education concentration) majors. *Prerequisite: B. Ed. 211 or permission of the instructor.* Prof. C. Kreider.

370–379 Special Topics

3 credits. A directed learning experience designed to allow students to explore current topics of special relevance in the field of business education.

421 Office Practice

1 credit. The study of methods and materials for teaching secretarial procedures and business machines. Enrollment limited to business education and business administration (business education concentration) majors. *Prerequisite: Business Education 111 or permission of the instructor.* Fall, 1988. S. Dolan.

473 Professional Internship, Secondary

(Education 473)

12 credits. Student teaching in a secondary classroom. *Prerequisite: Education 305.* Profs. S. Dolan, C. Kreider.

480–489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business education. *Prerequisites: approval of the department chair and the Provost.*

Economics

101 Principles of Economics I

3 credits. (Core) The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. Does not fulfill Core requirement for students majoring in the business department. Fall, Spring semesters. Staff.

102 Principles of Economics II

3 credits. (Core) Topics include elasticity, consumer behavior, production costs, market structures (competition, oligopoly, monopoly), and resource pricing. Does not fulfill Core requirement for students majoring in the business department. Fall, Spring semesters. Profs. Evans, Hoppie.

301 Intermediate Microeconomic Theory

3 credits. (Core) An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Fall semester 1988. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. (Core) Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Spring 1989.

303 Money and Banking

3 credits. (Core) A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisites: Economics 101, or permission of the instructor.* Spring semester. Prof. Evans.

304 Public Finance

3 credits. (Core) An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisites: Economics 102.* Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. (Core) The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Spring semester 1990. Prof. Hoppie.

307 International Economics

3 credits. (Core) The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite: Economics 101 or permission of instructor.* Fall semester, 1988. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. (Core) Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite: Economics 101 or permission of the instructor.* Fall semester. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. (Core) An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Fall semester 1989. Alternate years. Prof. Evans.

370-379 Special Topics

3 credits. (Core) Topics and problems of current relevance in economics.

372 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Fall semester. Prof. Hoppie.

480-489 Independent Study

Variable credit. (Core) Independent study and research on a problem or topic in the field of economics. *Prerequisites: approval of the department chair and the Provost.*

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite: permission of the instructor.* Fall semester 1989. Alternate years. Prof. Gliptis.

Business Administration

See Department of Business, page 18.

Business Education

See Department of Business, page 18, 21.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology*),
Ranck, Spangler
Associate Professors Reeder (*Chair*), Schaeffer

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their General Education Core requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations; and minors in chemistry and biochemistry.

The Bachelor of Science in Biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Premedical and other health professions programs are discussed on p. 52.

The Bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum; the medical technology curriculum; and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, New Jersey), York Hospital, Lancaster General Hospital, St. Joseph Hospital (Lancaster), Abington Hospital (Abington, Pennsylvania) and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the degree is granted. It is the student's responsibility to keep the Registrar's office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with the Registrar in January of the year of the clinical work.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's adviser and the department chair. Students planning much work in chemistry should consult with a departmental adviser as early as possible to plan the sequence of courses in chemistry, mathematics, physics, biology, and modern foreign language which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to insure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-2, 461-2, 490 or 496 or 451, 491 or 497; Biology 111, 112, 324, 324L; 9 semester hours of additional biology and/or chemistry, 6 of which must be in biology; Computer Science 115; Mathematics 122; Physics 102; and Modern Language*.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 346, 343, 344, 352, 361-2, 402, 421, 461-62, 451, or 490 or 496, 491 or 497; Computer Science 115; Mathematics 222; Physics 102; and Modern Language*.

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; 16 semester hours of biology which must include Biology 111, 112, 222, and 235; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus General Education Core and electives must total 100 semester hours. The clinical year includes a minimum of 28 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, 490 or 496 or 451, 491 or 497; Mathematics 122; Physics 102; two additional courses in biology or chemistry; Modern Language*.

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Psychology 105; and Education 305, 308, 309, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see p. 60.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 346, 352, 361-2, 461-2, 490 or 496 or 451; Computer Science 111; Mathematics 222; Physics 202, 221; Modern Language*; and a minimum of seven semester hours from the following courses: Chemistry 402, 421, 491 or 497; Mathematics 362; Physics 241, 301, 302, 491, or 492.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of chemistry.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

*A modern language is defined as one taught by the Department of Modern Language at Elizabethtown College or specifically approved by the Department of Chemistry. A chemistry or biochemistry student may fulfill the Department language requirement in any one of the following ways:

- 1) Proving competence in a modern language at the 112 level by examination.
- 2) Satisfactory completion of a 112-level modern language course.
- 3) Satisfactory study of a second modern language, not previously studied by the student, as determined for each individual by the department faculty.

101 General Chemistry I

4 credits. (Core). A general survey introducing the principles of chemistry. Topics include stoichiometry, atomic structure, bonding and geometry, states of matter, reactions, and solutions. Hours: lecture 3, laboratory 3. Fall semester. Profs. Reeder, Schaeffer.

104 General Chemistry II

4 credits. (Core). A continuation of Chemistry 101. Topics include colligative properties, thermodynamics, kinetics, equilibria, electrochemistry, and introductory organic and biochemistry. Hours: lecture 3, laboratory 3. *Prerequisite: Chemistry 101.* Spring semester. Prof. Reeder.

113 Organic Chemistry I

4 credits. (Core) The introductory course for those students who require more than one year of chemistry. A study of stoichiometry, bonding, geometry, equilibrium, kinetics, and instrumentation applied to carbon compounds. Hours: lecture 3, laboratory 3. *Prerequisites: high school chemistry and algebra or equivalent.* (Only 2 credits are awarded for Chemistry 113 for those students who have satisfactorily completed Chemistry 104.) Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. (Core) A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite: Chemistry 113.* Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or corequisite: Chemistry 114; permission of instructor.* Spring semester. Prof. Proctor.

213 Analytical Chemistry I

4 credits. (Core) Quantitative analysis integrating classical and instrumental methods. Hours: lecture 2, laboratory 6. *Prerequisite: Chemistry 114.* Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. (Core) A continuation of Chemistry 213, with added emphasis on instrumental methods and computer systems interfacing. Hours: lecture 2, laboratory 6. *Prerequisite: Chemistry 213.* Spring semester. Prof. Hedrick.

242 Chemical Equilibrium and Kinetics

3 credits. (Core) Thermodynamics as applied to chemical equilibria in ideal and nonideal, homogeneous, and heterogeneous systems. Kinetics, ionic solutions, and electrochemistry are also treated. *Prerequisites or corequisites: Chemistry 214, Mathematics 122, Physics 204 or 231.* Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. (Core) The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites: Chemistry 213 and Biology 112 or its equivalent.* Fall semester. Prof. Spangler.

324 Biochemistry II

3 credits. (Core) A continuation of Chemistry 323. *Prerequisite: Chemistry 323.* Spring semester. Prof. Spangler.

326 Techniques of Biochemistry I

1 credit. (Core) Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite: Chemistry 323.* Fall semester. Prof. Spangler.

327 Techniques of Biochemistry II

1 credit. (Core) A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite: Chemistry 326; corequisite: Chemistry 324.* Spring semester. Prof. Spangler.

343 Atomic Structure (Physics 343)

3 credits. (Core) The history and principles of quantum theory, radiation, atomic spectra, and the extranuclear structure of the atom. *Prerequisite: Chemistry 242.* Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. (Core) An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite: Chemistry 343.* Spring semester. Prof. Ranck.

346 Atomic Structure Laboratory (Physics 221L)

1 credit. (Core) (Description, see Physics 221). *Pre- or corequisite: Chemistry 343.* Fall semester. Prof. Ranck.

352 Advanced Chemistry Laboratory I

3 credits. (Core) Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite: Chemistry 344.* Spring semester. Prof. Ranck.

361,-2 Chemistry Seminar I, II

2 credits. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. Hours: seminar 1, laboratory 2 (Fall). Seminar 1, Spring semester. Fall, spring semester. Prof. Schaeffer.

370-379 Special Topics in Chemistry

Variable credit. (Core) Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites: permission of instructor and department chair.* Staff.

402 Advanced Inorganic Chemistry

3 credits. (Core) A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite: Chemistry 344.* Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. (Core) A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite:* Chemistry 344. Fall semester. Prof. Spangler.

451 Advanced Chemistry Laboratory II

4 credits. (Core) Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite:* Chemistry 242. Fall semester. Prof. Schaeffer.

461,2 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which the student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 461. Hours: seminar 1. Fall, spring semester. Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control.

Clinical Chemistry—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

490-495 Research in Chemistry

Variable credit. (Core) An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* permission of instructor. Staff.

496-499 Independent Problems in Chemistry

Variable credit. (Core) An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* Permission of instructor. Staff.

Education 305 Practicum in Secondary Education: Science

3 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *corequisite:* Education 225d.

Department of Communications

Professor Riley

Associate Professors Moore (*Chair*), Smith

Assistant Professors Byrnc, Hudson, Wennberg.

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and

visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the local access cable television production facility, ECTV, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, International Association of Business Communicators (Elizabethtown College Chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 48 credit hours required for a Bachelor of Arts degree with a *communications major* include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 215, 225, 235, 248, 485; Computer Science 120 or 121 (Computer Science 121 is required before further computer science courses can be taken); one English Professional Writing Course; and 15 credit hours in a concentration.

Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of career interest.

Prior to preregistration for the junior year the student must elect a communications concentration which requires 15 credit hours. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student to design, produce, and manage a variety of internal/external communications functions for business, industry, and other institutions. The student is required to choose two courses from the Business Department: BA 215, 265, or 312. Also required is one upper division communications elective (either 336 or 348) and two approved electives to be chosen from the following: Communications 304, 316, 336, 348; one additional Professional Writing Course; Business 355, and a choice of Business Administration 369, Sociology 360, or Psychology 414.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are either Communications 301 or 304, Communications 351 and 412, and two approved electives to be chosen from the following: Communications 311, 314, 316, 348, 422; Business Administration 215, 312, 355; one additional Professional Writing course; Political Science 333; and a choice of Business Administration 369, Sociology 360, or Psychology 414.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcasting and journalism. Required are Communications 311 and either 314 or 316, one upper division Communications elective (304, 314, 316, 321, 336, 411, or 422), and two approved electives to be chosen from the following: Communications 304, 314, 316, 321, 336, 411, 422; Business 312; Political Science 333.

A major is permitted to count no more than 57 credits in communications toward graduation requirements. Students may not count a course towards major requirements and those of the Core. One course may fulfill only one requirement.

Admission Requirements for Communications Majors

All students accepted into the communications major must demonstrate competency in writing and keyboarding. Writing competencies are determined by the Department of English. Students performing below an acceptable level are placed in writing courses designed to improve skills. Individuals who have not earned a C or better in a high school or equivalent typing course are placed by the department in an elementary typing, keyboarding, or word processing course. Successful mastery of these competencies is required for a student to continue in the program.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practica often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practica are not repeatable and may count as elective credit within the major. Internship credits count only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 100 opportunities already negotiated with regional communications organizations.

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the college. The computer is needed first in the computer science course or Com. 215.

105 Basic Speech

3 credits. Basic instruction in developing poise and confidence in speaking. Emphasis is placed on verbal and nonverbal communication, research, outlining, speech preparation, use of visual aids, and the rudiments of group dynamics and discussion. Prof. Riley.

109 Human Communication

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on communication on an individual and interpersonal level, examining such aspects as speech production, sender/receiver relationships, listening, non-verbal communication and the use of symbols. The use of communication in groups and discussion techniques is examined. Students explore forms of public address and mass media from a human communication perspective. Prof. Riley.

115 History and Theory of Communication

3 credits. Communication theory—its history, scope, application, and research methods employed. Significant individuals and events in the history and development of the field of mass communication are studied, as well as various mediums of communication. Prof. Moore.

125 Basic Production

3 credits. The design, theory, and development of production skills in a variety of audio visual materials, photography, and entry-level graphics. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials.

A 35mm single lens reflex camera and electronic flash are necessary to complete the required projects. Students are required to purchase various production materials for the course. Prof. Wennberg.

205 A—D Applied Communications

No credit. Four semesters of participation in approved cocurricular activities are required of all majors. All participants must meet the standards of each activity in order to count toward meeting the requirement. Of the four semesters, three must be in different approved activities which include: a. WWEC-FM, b. Forensics, c. *Etowah* and *Conestoga*, d. ECTV. Communication minors are required to have two semesters of participation in any activity or activities. Enrollment open only to communications majors or minors. A student is to enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisite: Communications 105 or 109.* Offered each semester. Profs. Smith, Bousliman.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of computer graphics are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 or 121. (Prerequisites for Professional Writing students: English 185 and one Professional Writing course at or above the 200 level.)* Profs. Byrne, Bousliman.

225 Audio Production

3 credits. The form and methods of elementary audio production are explored. In addition to theory and the development of basic skills, a student becomes knowledgeable in basic script writing. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video Production

3 credits. The use of video production equipment, including cameras, recorders, lighting, audio, switching, editing, and graphic techniques. Basic script writing and production planning skills are developed. Students are required to purchase production materials. *Prerequisites: Communications 125 and 225.* Prof. Hudson.

248 Communication Law and Issues

3 credits. Communication law and relevant issues within the field of communications. The history and effects of law, as well as past and current issues affecting the media. Students explore relevant case studies and evaluate their impact and possible future trends. *Prerequisite: Communications 115 or permission of instructor.* Offered each semester. Profs. Hudson, Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. *Prerequisite: Communications 105 or 109 or permission of instructor.* Fall semester. Prof. Riley.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. *Prerequisite: Communications 105 or 109 or permission of instructor.* Spring semester. Prof. Riley.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of instructor.* Fall semester. Prof. Byrne.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing

covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: Communications 311 or permission of instructor. (Professional Writing students: two Professional Writing courses and permission of the instructor.)* Spring semester, odd years. Prof. Byrne.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, and editing copy, continuity, and news for radio and television. *Prerequisite: Communications 225, 235, 311, or permission of instructor.* Spring semester. Prof. Smith.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites: Communications 225 and 235.* Fall semester, even years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites: Communications 125, 225, and 235. 205D (ECTV) may be corequisite.* Spring semester. Prof. Hudson.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisite: Communications 125, 215, 225, or permission of instructor.* Fall semester, odd years. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite: English Professional Writing Course or permission of instructor.* Fall semester. Prof. Byrne.

370-379 Special Topics

Variable credit. Periodic offering of the Department or directed study in topics of special interest to advanced majors. Staff.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. *Prerequisites: Communications 125, 225, and 235, or permission of instructor.* Fall semester, even years. Prof. Moore.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite: Communications 401.* Spring semester. Prof. Byrne.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisite: Communications 235, 248.* Fall semester, odd years. Prof. Hudson.

470-479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professional in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisite: Practicum—at least junior standing; campus-based sponsor; elective credit in the major; may not be repeated. Internship—senior standing, (2.70 GPA/3.0 GPA in the major); full-time for an entire semester off campus; general (free) elective credit only.* Prof. Moore.

480-489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites: at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite: senior standing.* Prof. Moore.

Department of Computer Science

Associate Professors C. Kreider, Leap (*Chair*)
Assistant Professors Painter, Tulley
Instructor Chiang.

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *two majors*—one in *computer science*, and the other in *computer science/business information systems*. Both provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 11/750 is used primarily for administrative purposes. The VAX 11/780, is dedicated to academic use.

The College also has a variety of micro and personal computers available. These include Apple, IBM, Zenith, and DEC personal computers. Interconnection between the computers is provided.

The department encourages students to purchase their own IBM-compatible personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase Zenith, IBM and Apple PC's at excellent prices.

Major software systems available on the computers include most major computer languages (BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, PLOT-10, Dbase III+, Lotus 1-2-3, and Mass-11); both CODASYL network type and relational data base management systems; and a screen forms management system. The College has several word processing packages in use.

All computer science majors and students enrolled in courses requiring use of the computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses, including Computer Science 121, 122, 221, 222, 332, 341, and 490.

The computer science major is further required to take Computer Science 321, 322, and either 421 or 422, plus nine credits of computer science electives; Mathematics 121, 122, 151, 201, and one course chosen from 131, 222, 252; and an area elective which consists of four courses in one area other than computer science. Area elective courses may not be chosen from among those required for or elected to meet Core or international studies requirements and must be approved by the computer science faculty advisor.

The computer science/business information systems major is further required to take Computer Science 135, 335, 409, and nine credits of computer science electives; Mathematics 117, 151, and 131; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of the FORTRAN language, data representation, file handling, and the use of subprograms. (Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor). Staff.

120 Introduction to Computer Processing

3 credits. An overview of computer concepts, uses, and issues. Software packages and computer applications (database, spreadsheet, and word processing) are a major component; elementary programming techniques are taught using a suitable high-level programming language. (This course does not count towards a computer science major or minor.) Staff.

121 Computer Science I

1 or 3 credits. The introductory concepts of computer organization, data representation, algorithmic development and structured programming. Operating systems and I/O devices are covered as they relate to the user. The student is expected to master the fundamentals of a high-level programming language. *Prerequisites: high school algebra and trigonometry.* (Students who have successfully completed Computer Science 115 will receive one credit for the course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis, recursion, internal sort/search methods, string processing, simple data structures and file processing. Assembly language concepts and internal operations of the C.P.U. are introduced. *Prerequisite: Computer Science 121.* Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Staff.

221 Algorithms and Data Structures

3 credits. Methods for structuring data and the algorithms for handling them are developed. Topics include abstract data types, including stacks, queues, linked lists, trees, and storage allocation and management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. *Prerequisite: Mathematics 151.* Fall semester.

322 Formal Languages

3 credits. The theoretical and practical analysis of the syntax of programming languages. Topics include the concepts and terminology associated with grammars, finite state machines, and parsing by recursive descent. *Prerequisites: Computer Science 221, 321.* Spring semester. Prof. Tulley.

332 Computer Organization

3 credits. Introduction to Boolean algebra, logic circuit and design, and their use in computer architecture. Basic parts of computer systems are studied, including storage, control, and input/output systems. *Prerequisite: Computer Science 222.* Fall semester. Prof. Leap.

333 Computer Systems Interfacing

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. Staff.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite: Computer Science 135.* Staff.

340 Business Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, and information; systems design; and an investigation of information systems of the various functional areas within the organization. *Prerequisites: Computer Science 120 or 121; Business Administration 215, 265.* Spring semester. Prof. Painter.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisites: Computer Science 121 and either 122 or 135.* Fall semester. Prof. Painter.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites: Computer Science 221; Mathematics 151; or permission of instructor.* Fall, alternate years. Prof. Tulley.

361 Computer Graphics

3 credits. Introductory concepts of computer graphics, including hardware, software, data storage and man/machine interaction. The student is expected to become conversant with computer graphics hardware and be able to create software to provide the interactive generation of graphical output. *Prerequisites: Computer Science 221 and either Mathematics 172 or Mathematics 201.* Fall semester. Prof. Chiang.

370-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite:* permission of instructor. Staff.

409 Data Base and Information Systems

3 credits. A study of information systems design and data base management techniques. Topics include information retrieval theory, data base design, data models, maintenance, file security, data reliability, CODASYL recommendations on DBMS. *Prerequisites:* Computer Science 335 and either Computer Science 221 or permission of instructor. Spring semester. Prof. Chiang

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites:* Computer Science 222, and either Computer Science 322 or permission of instructor. Fall semester. Prof. Leap

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites:* Computer Science 332. Spring, alternate years. Prof. Leap.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite:* approval of computer science faculty. Staff.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite:* approval of computer science faculty and Dean of the Faculty. Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal and a final report and defense of work. *Prerequisites:* junior or senior status and permission of instructor. Staff.

Earth Science

See Department of Physics and Pre-Engineering, page 44.

Department of Education

Professor Rice

Associate Professors Bowers, Callenbach, Fox, Orlando (*Chair*)

Assistant Professor Benelli

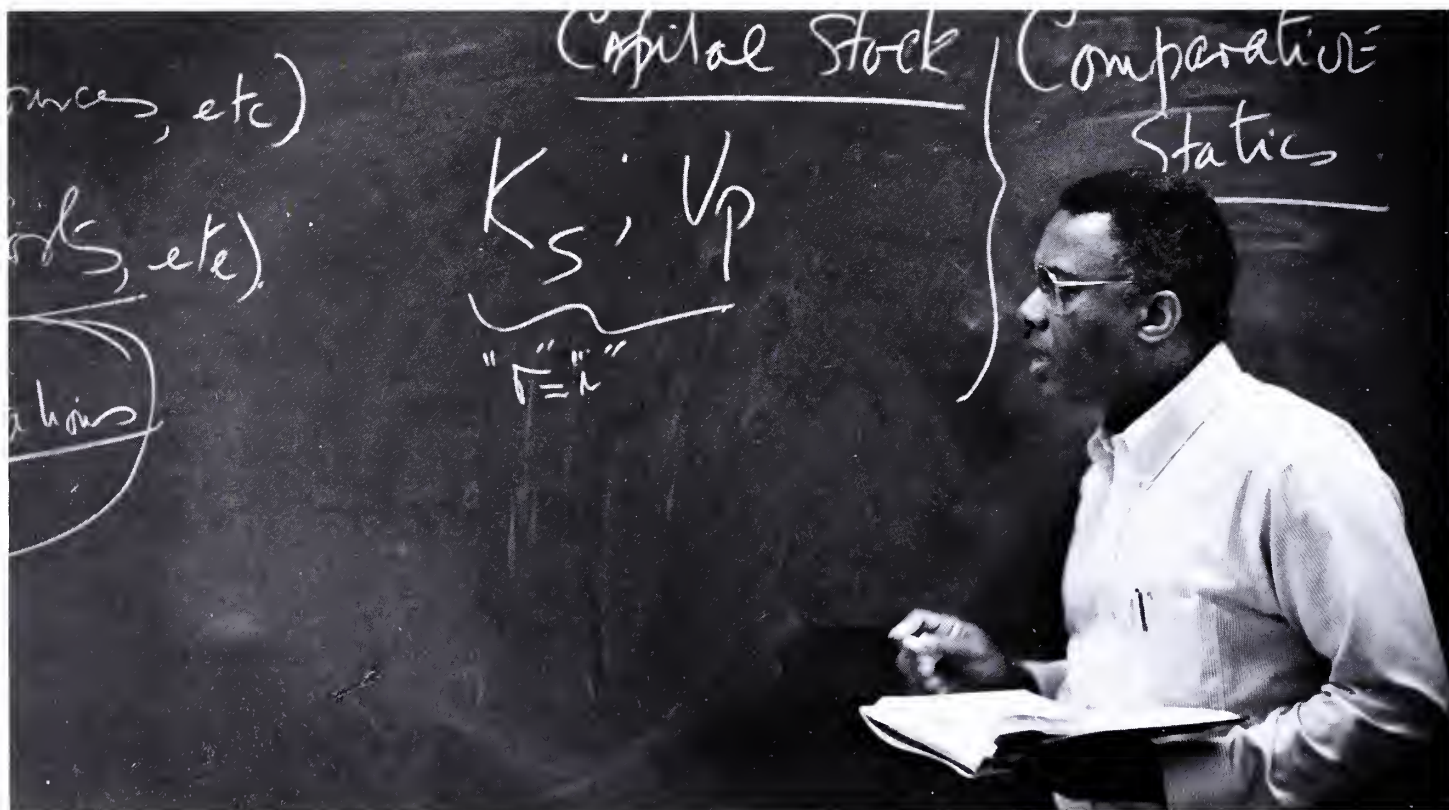
Bachelor of Science

The department offers three major certification programs—Early Childhood (N-3), Elementary (K-6), and Secondary (7-12)—combining a strong liberal arts education with the development of high professional competence. Complementing the General Education Core and, in secondary certification, the student's academic major, the certification programs bring together in a creative way the student, the school, and the subject to be taught. The department further stresses the importance of supervised field experiences which complement on-campus courses in education.

Admission to Teacher Education Program

All applicants who plan to teach must, by the time they have completed Education 235 or 305, file a written application for admission to the Teacher Education Program and meet the qualifying criteria of the Department of Education: proficiency in English and speech, good physical and mental health, a grade point average of at least 2.0, approval of the Office of Student Affairs, satisfactory evaluation and recommendation by the members of the Department of Education and approval by the major department of prospective secondary school majors.

Note: Students who fail to meet these criteria as applicants, or who later fail to maintain satisfactory progress, are counseled out of the program and directed into other areas of endeavor.



Progress Toward Program Completion

1. Students are evaluated at the conclusion of each semester after admission into the program, and may be advised to withdraw at any time the department determines that withdrawal is in the best interests of the College, the program, and the student.
2. A grade point average of 2.0 is required for enrollment in any Education course except Ed 205 and Ed 225.
3. Any grade below *C* in the teaching major after completion of the 100-level courses will disqualify a student from certification.
4. Students should apply for certification during the semester in which they will graduate. Should they apply after they have graduated, they must satisfactorily complete whatever additional requirements are then in effect before they can receive certification.

Certification Program Requirements

The Secondary Certification Program (accompanied by the bachelor of arts or bachelor of science degree, depending on the student's academic major):

- A. General Education Core as specified by the College.
- B. Academic major as outlined by each program area which supports a certification program: Business Ed., English, Mathematics, Science (Biology, Chemistry, Physics, and General Science), Social Studies.
- C. Professional education requirements: Education 215, 305, 308, 309, 415, 473.
- D. Satisfactory completion of the Pennsylvania Teacher Certification Testing program.

The Elementary Education Major (bachelor of science degree):

- A. General Education Core as specified by the College. Psychology 105 must be taken as part of the social science Core requirement.
- B. Professional education requirements: Education 205, 225, 226, 227, 235, 255, 325, 335, 355, 356, 365, 472, 490–498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305.
- C. Electives
- D. Satisfactory completion of the Pennsylvania Teacher Certification Testing program.

The Early Childhood Education Major (bachelor of science degree):

- A. General Education Core as detailed by the College. Psychology 105 must be selected as part of the social science Core requirement.
- B. Professional education requirements: Education 205, 225, 226, 227, 235, 255, 315, 320, 325, 335, 355, 365, 471, 490–498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305.
- C. Electives
- D. Satisfactory completion of The Pennsylvania Teacher Certificate Testing Program.

205 Foundations of Education

4 credits. A study of some of the historical, philosophical, sociological, and psychological foundations of education. *Prerequisite: Psychology 105.* Prof. Fox.

Note: Admission to the Teacher Education Program is a prerequisite to any other education course.

215 Introduction to Secondary Education

3 credits. Introduces prospective secondary teachers through a historical, philosophical, psychological, sociological and legal perspective to the development of secondary education and to major issues of multicultural/multiethnic, bilingual, mainstreaming, sexism, student rights, teachers' roles and rights, government and control, and the "excellence" movements in Education. *Prerequisite: Psy 105.* Prof. Fox.

225 Child Development

4 credits. Study of development from birth to age eleven and of educational implications of developmental theories. A weekly field experience allows for the application of observation techniques and child development knowledge. Prof. Benelli.

226 Media and Practicum

1 credit. *Instruction in media*, with a pre-school or elementary classroom experience. *Corequisite: Ed 235, Ed 255.* Prof. Bowers.

227 Media and Practicum

2 credits. *Instruction and application of media*, including computers, with a pre-school or elementary classroom experience. *Corequisite: Ed 225, Ed 235, Ed 255, Ed 256, Ed 365.* Prof. Bowers.

235 Fundamentals of Reading Instruction

3 credits. The systematic assessment and teaching of the basic reading skills: word recognition, word analysis, and comprehension skills. *Prerequisite: Education 205; corequisite: Education 226, Education 255.* Prof. Callenbach.

255 Children's Literature

3 credits. A study of representative works from the field of children's literature. (*Corequisite: Education 226 and Education 235.*) Prof. Rice.

305 Practicum in Secondary Education

4 credits. The instructional methodology of an academic discipline is integrated with in-school experience under the guidance of a clinical professor in the academic major: biology, chemistry, physics, general science, or social studies. *Prerequisite: Psychology 105; corequisite: Education 308.* Secondary Clinical Professors.

308 Media and Practicum

1 credit. *Instruction in media*, with a secondary school classroom experience. *Corequisite: Ed 305.* Prof. Bowers.

309 Media and Practicum

1 credit. *Instruction and application of media*, with a secondary school classroom experience. *Corequisite: Ed 415.* Prof. Bowers.

310 History of Science

1 credit. A study of developments in science from the ancient Greeks to the twentieth century. *Prerequisite: permission of instructor.* Prof. Hoffman.

315 Early Childhood Education

4 credits. A study of programs from preschool through grade three, emphasizing the setting, the child, and the special needs and approaches of early childhood education. On-campus study is coordinated with the experiences of observing and participating in early childhood settings. *Prerequisites: Education 225, Education 235, Education 255.* Fall semester. Prof. Benelli.

320 Special Methods in Early Childhood Education

4 credits. Integrates early childhood materials and methods into the framework of the preoperational child. *Prerequisite: Education 315; corequisites: Education 325, 335, 355, 365.* Spring semester. Prof. Benelli.

325 Science for Early Childhood/Science for Elementary Education

3 and 3 credits, respectively. A study of science concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); 315 (early childhood); corequisite: Education 227.*

335 Mathematics for Early Childhood/ Mathematics for Elementary Education

3 and 3 credits, respectively. A study of mathematics concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: 235 (elementary); Education 315 (early childhood); corequisite: Education 227.* Prof. Rice.

355 Language Arts and Communication for Elementary Education

3 credits. A study of concepts, procedures and materials for language arts, including listening and writing for the elementary child. *Prerequisite: 235; Corequisite 227.* Prof. Rice

356 Language Arts and Reading for Early Childhood/ for Elementary Education

3 and 3 credits. A study of concepts, procedures, and materials for language arts and reading for the elementary child. *Prerequisite 235, Corequisite 227.* Prof. Callenbach.

365 Social Studies for Early Childhood/ Social Studies for Elementary Education

3 and 4 credits, respectively. A study of social studies concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); 315 (early childhood); corequisite: Education 227.* Prof. Fox.

371–380 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite: permission of instructor.*

415 Topics in Secondary Education: Reading

2 credits. *Theory and practice of secondary education*, with emphasis on developmental reading and reading in the content area. *Prerequisite: Education 305; corequisite: Education 309.* Prof. Callenbach.

471 Professional Internship, Early Childhood

16 credits. Student teaching in an early childhood classroom. *Prerequisites: Education 320, 325, 335, 355, 365.* Staff.

472 Professional Internship, Elementary Education

16 credits. Student teaching in an elementary classroom. *Prerequisites: Education 325, 335, 355, 356, 365.* Staff.

473 Professional Internship, Secondary

14 credits. Student teaching in a secondary classroom. *Prerequisite: Education 305; corequisite: Education 309, 415.* Staff.

480–489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

490–498 Special Topics

Variable credit. Courses designed to give students opportunity to pursue work in an area of major interest in such topics as art in the elementary school, creativity, computers in education, children's literature, developmental reading.

Department of English

Professors Campbell (*Chair*), Dwyer
Associate Professors Rohrkemper, Sarracino
Assistant Professors Huber, Martin.

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary studies is the fundamental aim of the General Education courses and of the rigorous and comprehensive concentrations which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The English major requires 42 hours, including the 6 hours specified as literature area Core.

The literature concentration requires English 105, 301, 363, 394; one course in literary forms (all English courses with middle digit 1); three courses in literary movements (all English courses with middle digit 2); one course in individual authors (all English courses with middle digit 3); two courses in American Literature (all English courses with middle digit 4); and an additional 9 hours of electives in English (excluding English 101 and 102).

The professional writing concentration requires English 105, 185, 301, 393; Communications 215; Computer Science 120; one English course with middle digit 1; two English courses with middle digit 2; one English course with middle digit 3; one English course with middle digit 4; and 12 hours in writing electives to be selected from English and Communication writing courses: English courses with middle digit 8 (no more than two courses from English 285A/B/C/D) and Communications 311, 314 (no more than one course and not necessarily either).

The secondary education concentration requires English 102, 105, 185, 301, 306; one English course with middle digit 1; one English course with middle digit 2; one English course with middle digit 3; two English courses with middle digit 4; one English course from 381, 382, 383; an additional 9 hours of electives in English (excluding English 101); Psychology 105; and Education 305, 308, 309, 415, 473.

The Department of English offers a *minor* consisting of 24 hours (including 6 in literature from the Core) and distributed as follows: English 105, 185; one course with the middle digit 1, one course with the middle digit 2, one course with the middle digit 3, and one course with the middle digit 4; and two courses from the remainder of the Department's offerings (excluding English 101, 102, 306). Students must apply for acceptance to the minor no later than the beginning of their junior year (at the completion of 60 credits).

101 Basic Writing (Developmental Studies 101)

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. No credit granted if taken after successful completion of English 102. Staff.

102 Expository Writing

3 credits. A course allowing students to experience writing as a dynamic, complex process involving recursive stages of probing a subject, generating ideas, planning, redrafting, and editing. Staff.

105 Introduction to Literature

3 credits. (Core) A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature, and to provide the necessary background for upper-level literature courses. Readings are drawn from major authors such as Homer and Shakespeare. *Prerequisite: English 102 or exemption from it.* Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisite: permission of the instructor.* Prof. Rohrkemper.

285A/B/C/D Writing in the Professions

3 credits each. A study of the range of materials typically produced in specific professional areas so that students gain a sense of the constraints that govern their style:

285A Writing for Science and Technology

285B Writing in the Health Professions

285C Writing in the Social Sciences

285D Writing for Government and the Judicial Systems

Prof. Huber.

301 History of the English Language

3 credits. A combination of a history of language and an introduction to linguistics related to literature, stylistics, and composing. Staff.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and the Learning Center. *Prerequisite to professional semester.* Prof. Callenbach.

311 Autobiography

3 credits. A critical study of this literary form of non-fiction writing and instruction in writing autobiographically. Professional writing majors may fulfill either literature or upper-level writing requirement. *Prerequisite: English 105.* Prof. Huber.

312 English Drama Before 1900

3 credits. (Core) A study of representative English plays, excluding Shakespeare, from the Middle Ages to the twentieth century, emphasizing Elizabethan and Jacobean drama. *Prerequisite: English 105.* Alternate years. Prof. Campbell.

313 Modern Drama

3 credits. (Core) A study of drama from the realism of Ibsen through naturalism, expressionism, and symbolism to the current avant garde theatre. *Prerequisite: English 105.* Alternate years. Prof. Campbell.

314 The English Novel Before 1900

3 credits. (Core) A study of selected masterpieces from Defoe to Hardy as works of prose art and as turning points in the development of the form. *Prerequisite: English 105.* Alternate years. Prof. Campbell.

317 Modern Novel

3 credits. (Core) A study of the work of major novelists of the twentieth century with emphasis upon the development of the novel as an art form. *Prerequisite: English 105.* Alternate years. Prof. Rohrkemper.

318 Modern Poetry

3 credits. (Core) A study of at least three major twentieth-century poets as well as selections from writers who have published within the last thirty years. *Prerequisite: English 105.* Alternate years. Prof. Dwyer.

319 The Fantastic in Literature

3 credits. (Core) A study of major works of fantasy (*Alice in Wonderland*, *The Hobbit*, *The Golden Key*, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic." *Prerequisite: English 105.* Alternate years. Prof. Sarracino.

320 Concepts of the Renaissance

3 credits. (Core) A study of the "ruling ideas" of the Renaissance in Britain; representative nondramatic writers with an emphasis on Spenser. *Prerequisite: English 105.* Alternate years. Prof. Martin.

322 The Seventeenth Century

3 credits. (Core) A study of the major nondramatic writers, excluding Milton, from 1600 to 1660: among them, Donne, Jonson, Herbert, and selected prose writers. *Prerequisite: English 105.* Alternate years. Prof. Martin.

323 The Restoration and Eighteenth Century

3 credits. (Core) A study of poetry and prose from 1660 to 1800, with an emphasis on Dryden, Swift, Pope, Sterne, and Johnson. *Prerequisite: English 105.* Alternate years. Prof. Dwyer.

327 The Romantic Movement

3 credits. (Core) A study of selected poetry and prose most significantly embodying the central concepts and achievements of English Romanticism. *Prerequisite: English 105.* Alternate years. Prof. Dwyer.

328 The Victorian Period

3 credits. (Core) A study of selected poetry and prose from Tennyson to Hardy, particularly emphasizing the changing response of the artist to the conflicts stemming from the industrialization of the period. *Prerequisite: English 105.* Alternate years. Prof. Sarracino.

329 Modern British Literature

3 credits. (Core) A study of poetry and prose from the end of the nineteenth century to the middle of the twentieth, with an emphasis on the development of a modern aesthetic in the works of such writers as Conrad, Yeats, Joyce, Lawrence, Woolf, and Auden. *Prerequisite: English 105.* Alternate years. Prof. Rohrkemper.

331 Chaucer

3 credits. (Core) A study of representative works of Chaucer. *Prerequisite: English 105.* Alternate years. Prof. Martin.

332 Shakespeare

3 credits. (Core) A study of representative works of Shakespeare. *Prerequisite: English 105.* Prof. Campbell.

333 Milton

3 credits. (Core) A study of representative works of Milton. *Prerequisite: English 105.* Alternate years. Prof. Martin.

337 Eighteenth-Century English Authors

3 credits. (Core) A study of representative works of one or two major authors such as Pope, Swift, Fielding, and Goldsmith. *Prerequisite: English 105.* Alternate years. Prof. Dwyer.

338 Nineteenth-Century English Authors

3 credits. (Core) A study of representative works of one or two major authors such as Blake, Keats, Dickens, and Hardy. *Prerequisite: English 105.* Alternate years. Prof. Campbell.

340 The American Romantic Movement

3 credits. (Core) A study of American Transcendentalism, including its sources, and of major figures of the period such as Hawthorne, Melville, Whitman, Emerson, and Thoreau. *Prerequisite: English 105.* Fall, alternate years. Prof. Sarracino.

341 The Rise of Realism in American Literature

3 credits. (Core) A study of American literature in the late nineteenth and early twentieth centuries, with emphasis on such writers as Dickinson, Clemens, Robinson, Frost, Dreiser, and Fitzgerald. *Prerequisite: English 105.* Alternate years. Prof. Sarracino.

342 Experimentalism in American Literature

3 credits. (Core) A survey of major American writers of the twentieth century, authors such as Pound, Eliot, Faulkner, Williams, Stevens, Stein, and Hemingway. *Prerequisite: English 105.* Alternate years. Prof. Rohrkemper.

343 American Authors

3 credits. (Core) A study of the writings of one or two American authors such as Melville, James, Whitman, and Faulkner. *Prerequisite: English 105.* Alternate years. Profs. Rohrkemper and Sarracino.

351 Analysis of Poems

3 credits. (Core) Intensive training in reading the individual poem accurately and sensitively. *Prerequisite: English 105.* Alternate years. Staff.

357 Women and Literature

3 credits. (Core) A study of the effects on women writers and readers of a male dominated literary tradition. *Prerequisite: English 105.* Alternate years. Prof. Huber.

363 Literary History of Great Britain

3 credits. A study complementing the period-course requirement for literature-concentration students and conveying the relationships of historical literary movements. *Prerequisite: three upper level courses in literature.* Alternate years. Staff.

370–379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/faculty interest. *Prerequisite: English 105.* Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite: permission of instructor.* Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentations of technical information. *Prerequisite: permission of instructor.* Staff.

383 Managerial Communication

3 credits. A course emphasizing the concerns of administrative writers and including instruction in oral and graphic communication of business information. *Prerequisite: permission of instructor.*

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course instructing students in advanced writing and involving them in service in the Writing Service as responsive readers of other students' prose. *Prerequisite: English 185.* Fall semester. Prof. Huber.

385 Writing for Publication

3 credits. Advanced study of copy editing and of techniques for promoting one's own manuscripts. Prof. Huber.

393 Senior Writing Seminar

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisite: Professional Writing Concentration or permission of instructor.* Alternate years. Prof. Huber.

394 Senior Seminar in Literary Criticism

3 credits. A seminar for literature majors on the history of literary criticism, including research techniques. *Prerequisites: English 105; permission of instructor for nonmajors.* Alternate years. Prof. Dwyer.

470-479 Internships

1-3 credits. One- or two-credit internships may be requested in either a student's junior or senior year in an on- or near-campus assignment. Three-credit internships are for students proven competent in one- or two-credit internships or judged as having special aptitudes for the specific internship. See the Department Chair for information. Staff.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education: English

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite: Psychology 105; corequisite: Education 308, 309.* Prof. Callenbach.

Department of Fine and Performing Arts

Professors Harrison (*Chair*), Kitchen, Libhart
Associate Professors Douglas, Simmers, Stites
Assistant Professors Kiser, Shinn
Instructor Friedly

Bachelor of Arts; Bachelor of Science

The department offers three majors leading to the degrees of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, and Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theatre. Minors in Art and Music are offered.

Visual Art

The academic and the practical courses in the art program are offered to help students refine their creative potential and expand their judgment of the visual arts. Studio courses in three-dimensional media are offered.

Minor in Art. The minor in Visual Arts requires Art 105, Art 106 or Art 220, nine credits in academic art courses (art history, art appreciation and/or art criticism), and six credits elected from studio and/or academic fine arts courses, three hours of which may be in other fine arts division courses or Communications 125 or Communications 215.

105 Drawing

3 credits. (Core) Studio practice in basic drawing media for sketching and rendering both live and inanimate subjects. Prof. Friedly.

106 Ceramics I

3 credits. (Core) An introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

203 20th Century American Art

3 credits. (Core) An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. (Core) Studio easel painting in opaque media, with stress on pictorial organization and application of color theories. *Prerequisite: Art 105 or permission of the instructor.* Staff.

206 Ceramics II

3 credits. (Core) An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite: Art 106.* Prof. Friedly.

220 Sculpture

3 credits. (Core) An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and instruction in the use of the sculptor's materials and techniques. Staff.

324 American Arts/Crafts

3 credits. (Core) Comprehensive scan of U.S. arts, observing their derivation from social, ethnic, and aesthetic influences. Prof. Libhart.

351 Printmaking

3 credits. (Core) Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite: Art 105 or the permission of the instructor.* Staff.

355 Introduction to Art

3 credits (Core) Experience with selected works by major and minor artists of the modern epoch, as a means of recognizing and evaluating artistic style. Prof. Libhart.

Dance

DA 101 Interpretive Movement (Same as Physical Education 290)

1 credit. (Core) Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Prof. Williams-Henry.

DA 102 Introduction to Ballet (Same as Physical Education 295)

1 credit. (Core) Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Prof. Williams-Henry.

Music

The music programs are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained from the department chair.

The music education major requires Music 101, 102, 103, 104, 105, 201, 202, 203, 204, 231, 234, 237, 301, 311, 312, 321, 322, 343, 415 or 417, 440, 441, 442, 471, a minimum of twelve hours of applied music instruction, a minimum of eight credit hours in ensemble participation, a senior recital, and Education 205 and 225d.

Music education majors may elect a choral, instrumental, or general emphasis, the requirements of each emphasis varying slightly from the above. The major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 101, 102, 103, 104, 105, 141, 151, 201, 202, 203, 204, 231, 234, 237, 252, 301, 311, 321, 343, 353, 354, 415 or 417, 440, 441, 442, 455, 456, 473, 474, 475, 476, 477, 478, 479, three hours of music elective, a minimum of twelve semester hours in applied music instruction, a senior recital, and a minimum of six hours credit in ensemble.

The music therapy major is approved by the National Association for Music Therapy and the National Association of Schools of Music.

Admission into the music therapy and music education majors does not imply that a student is guaranteed completion of the degree. The advisor,

in conjunction with the Music Department faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or unsatisfactory academic performance. The student has the right of appeal of a decision based on unprofessional behavior in the same manner as dismissal for academically-related reasons.

In order to graduate as a music therapy or music education major, a student must maintain the following standards:

(1) A *music therapy major* must earn a grade of C– or better in all music and music therapy courses. A *music education major* must earn a grade of C– or better in all music and music education courses, and in Education 205.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicum and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

A six-month internship in an approved clinical facility is required for the music therapy degree. This internship is taken after the completion of the four-year music therapy major.

The Bachelor of Arts in Music normally requires Music 101, 102, 103, 104, 105, 201, 202, 203, 204, 321, 322, 415 or 417, 419, 440, 441, 442, twelve semester hours credit in applied music, a senior recital, and three hours of ensemble credit. The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental adviser, each Bachelor of Arts music major works out a program which includes at least 40 hours of music courses.

The minor in music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The minor in music requires Music 101–103; 102–104; 105; 415 or 417 or 441 or 442; performing competency in one applied music area equal to the end of the sophomore year level; minimum of two credits of music ensemble participation; and attendance at Repertoire Class (Music 100) for four semesters.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to precollege students, adults, and college students who desire to take instruction without credit. Instruction is available from qualified instructors and departmental faculty. Interested persons should contact the director of the Preparatory Division.

100 Repertoire Class

Eight semesters of Repertoire Class are required of music majors for graduation. Four semesters of Repertoire Class are required of music minors for graduation.

101 Music Theory

2 credits. (Core) Fundamentals of music theory, harmony, and form, with emphasis on scales, keys, modes, and notation. Prof. Douglas.

102 Music Theory

2 credits. (Core) A continuation of Music 101, with an introduction to nonharmonic tones and seventh chords. Includes binary and ternary forms plus elementary keyboard harmony. *Prerequisites:* Music 101; *permission of instructor.* Prof. Douglas.

103 Fundamentals of Sight-Singing and Ear-Training

1 credit. Development of visual, aural, and basic keyboard skills related to the theoretical and analytical materials covered in Music 101. *Corequisite:* Music 101. (Students who fail Music 103 are not permitted to enroll in second semester theory, Music 102.) Prof. Douglas.

104 Sight-Singing and Ear-Training

1 credit. A continuation of 103. *Prerequisite:* Music 103 or *permission of instructor.* (Students who fail Music 104 are not permitted to enroll in advanced music theory, Music 201.) Spring semester. Prof. Douglas.

105 Introduction to Music Literature

3 credits. (Core) Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Harrison, Stites.

111 Voice Class

1 credit. (Core) Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Prof. Simmers.

113 Piano Class

1 credit. (Core) Designed to develop basic piano skills and knowledge of music fundamentals. Daily practice required. Not open to music majors. Credit for Music 113 given only upon completion of Music 114. Fall semester. Prof. Shinn.

114 Piano Class

1 credit. (Core) A continuation of Music 113. *Prerequisite:* Music 113. Spring semester. Prof. Shinn.

117 Piano Class

1 credit. (Core) Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite:* *permission of instructor for nonmajors.* Prof. Seyler.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. Prof. Englar.

120 Guitar Class

1 credit. (Core) A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite:* Music 119 or *permission of instructor.* Prof. Englar.

141 Recreational Music

1 credit. The use of recreational instruments, materials and techniques with handicapped persons. *Prerequisite:* *music major or permission of instructor.* Spring semester. Staff.

151 Introduction to Music Therapy

3 credits. A survey of music therapy through lecture-demonstration sessions, reading, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite:* *music major or permission of instructor.* Fall semester. Prof. Shinn.

201 Advanced Music Theory

2 credits. Advanced harmony including seventh chords, chromatic harmony, and form and analysis. 18th century Counterpoint is introduced. Fall semester. Prof. Douglas.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on 19th and 20th century harmonic practice. Includes compositions using 18th century contrapuntal techniques. Spring semester. Prof. Douglas.

203 Advanced Sight-Singing and Ear-Training

1 credit. Continued emphasis on reading and dictation skills. (Students who fail Music 203 are not permitted to enroll in Music 202.) Fall semester. Prof. Douglas.

204 Advanced Sight-Singing and Ear-Training

1 credit. A continuation of Music 203. *Prerequisite:* Music 203 or *permission of instructor; corequisite:* Music 202. Spring semester. Prof. Douglas.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. Fall semester. Prof. Douglas.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. Spring semester. Prof. Luckenbill.

235 History of Jazz

3 credits. (Core) Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, viola, violoncello, and double bass. Fall semester. Prof. Leithmann.

238 Intermediate String Class

1 credit. A continuation of 237 dealing with the study of cello and double bass. *Prerequisite: Music 237.* Spring semester. Prof. Leithmann. (The department reserves the right to offer the class as private lessons if fewer than three students are enrolled.)

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Shinn.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202–204, 269.* Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Course provides students with opportunities to develop their knowledge of basic theory, and skills in singing and song leading, conducting, playing classroom instruments, listening and rhythmic activities, and teaching music lesson plans, as well as to observe classroom music instruction. Offered each semester. Prof. Stites.

311 Music in the Elementary School

3 credits. Thorough study of objectives, methods, and materials for elementary school music programs through singing, instrumental, rhythmic, creative, and listening activities. Detailed study and use of recent school music songbook series. Observations and laboratory experience included. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Stites.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experience included. Spring semester. Prof. Kitchen.

321 Instrumental-Choral Conducting Fundamentals

3 credits. Instruction in the fundamental of conducting. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisite: Music 202 or permission of instructor.* Prof. Kitchen.

322 Instrumental-Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Prof. Simmers.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and an introduction to string ensemble techniques, methods, and literature. *Prerequisite: Music 238.* Fall semester. Prof. Leithmann. (The department reserves the right to offer this course as private lessons if fewer than three students are enrolled.)

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. Fall semester. Prof. Hall.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343.* Spring semester. Prof. Hall.

353 Techniques in Therapy

2 credits. Behavioral research techniques and how they apply to the uses of music in the therapeutic setting. Students examine the role music has in altering social and academic behavior in therapeutic applications and in life as a whole. *Prerequisite: Music 252.* Fall semester. Prof. Shinn.

354 Research Methods

2 credits. An introduction to the methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. *Prerequisite: Psychology 105.* Fall semester. Prof. Ellsworth.

371–380 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

415 Classical-Romantic Music Literature

2 credits. (Core) Survey of instrumental and vocal music of the Classical and Romantic periods. *Prerequisite: Music 105 or permission of instructor.* Fall semester. Prof. Stites.

417 Twentieth Century Music Literature

2 credits. (Core) Survey of music from Impressionism to the present avant-garde styles. *Prerequisite: Music 105 or permission of instructor.* Spring semester. Prof. Harrison.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisite or corequisite: Music 202.* Offered on sufficient demand. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. Credit for Music 431 is given only upon completion of Music 432. *Prerequisites: two semesters of Music 269.* Offered with sufficient enrollment. Prof. Seyler.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite: Music 431.* Prof. Seyler.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. *Prerequisites: Music 202 and 204.* Prof. Douglas.

441 History of Music

3 credits. Survey course from antiquity to the Baroque era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Harrison.

442 History of Music

3 credits. Survey course from the Baroque through the Contemporary era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite: Music 202 or permission of instructor.* Spring semester. Prof. Harrison.

455 Music in Therapy I: Principles

3 credits. Survey of experimental studies dealing with the effects of music on behavior, the intervention of music in therapy, and basic therapeutic approaches and techniques. *Prerequisites: Music 252, 353, 354; or permission of instructor.* Prof. Shinn.

456 Music in Therapy II: Practices

3 credits. Therapeutic approaches and techniques in music therapy. *Prerequisite: Music 455 or permission of instructor.* Prof. Shinn.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite: permission of Department.* Prof. Kitchen.

473–78 Clinical Experiences I-VI: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. Minimum of thirty hours total for each clinical experience. Music therapy majors only. *Prerequisites: Music 141, 151.* Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite: permission of instructor.* Prof. Shinn.

481–490 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, or research under faculty supervision. *Prerequisite: permission of instructor.* Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department chair for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Nonmusic majors with no piano background or limited background may enroll in Piano Class (Music 113, 114). Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles. Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; they may repeat the ensembles for credit which they apply to the fine arts Core requirement. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director. Ensembles are graded P/NP.

268 Voice

1 credit. (Core) Profs. Roth, Simmers, Stites.

269 Piano

1 credit. (Core) Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Seyler, Shinn.

270 Organ

1 credit. (Core) Staff.

271 Violin

1 credit. (Core) Prof. Leithmann.

272 Viola

1 credit. (Core) Prof. Leithmann.

273 Cello

1 credit. (Core) Prof. Leithmann.

274 String Bass

1 credit. (Core) Prof. Leithmann.

275 Guitar

1 credit. (Core) Prof. Englar.

276 Flute

1 credit. (Core) Prof. Metz.

277 Clarinet

1 credit. (Core) Profs. Hall, Kitchen.

278 Oboe

1 credit. (Core) Staff.

279 Bassoon

1 credit. (Core) Staff.

280 Saxophone

1 credit. (Core) Profs. Hall, Kitchen.

281 Trumpet/Cornet

1 credit. (Core) Prof. Douglas.

282 French Horn

1 credit. (Core) Prof. Douglas.

283 Trombone

1 credit. (Core) Prof. Douglas.

284 Baritone

1 credit. (Core) Prof. Douglas.

285 Tuba

1 credit. (Core) Prof. Douglas.

286 Percussion

1 credit. (Core) Prof. Luckenbill.

360 Chamber Music

½ credit. (Core) General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Collegians (men's choir), Piano Trio, and Piano Ensemble will be formed as need arises.

361 Concert Choir

1 credit. (Core) Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Simmers.

362 Choral Union

½ credit. (Core) Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. Stites.

365 Orchestra

1 credit. (Core) Performs two or three major concerts during the academic year which constitute an invaluable part of musical training in literature and technique of performance. *Prerequisite for winds and percussion: permission of instructor.* Prof. Leithmann.

368 Jazz Band

½ credit. (Core) The Elizabethtown College Jazz Band serves as an integral part of the College curriculum. Its program of music includes swing, pop tunes, ballads, and jazz, including old standards and current progressive jazz. Staff.

369 Concert Band

1 credit. (Core) Open to any qualified student; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

255 Stagecraft/Lighting

3 credits. (Core) The technique and theory of staging and lighting theatre productions. Topics include set design and construction; and planning and executing lighting effects. Prof. Kiser.

265 Basic Acting

3 credits. (Core) An examination of the art and craft of the stage actor. Skills are developed in voice, acting style, and theory. Students are required to participate in a number of class projects involving the memorization of parts. Prof. Kiser.

French

See Department of Modern Languages, page 39.

Department of History

Professors K. Kreider, Mumford (*Chair*), Ritsch, Vassady, Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 105 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts in History as a history major and receive certification in the social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

For a *minor in history*, the student must successfully complete 21 hours of course work, composed of the following courses: History 105, 201, 202, 390, one other course in United States history, one other course in European history, and one course in non-United States, non-European history. Students with specific career or personal interests are encouraged to discuss these with the department chair.

105 Topics in the History of Western Civilization

3 credits. (Core) A highly selective approach to the long-range developments and to the major problems of our Western heritage. Staff.

201 History of the United States to 1877

3 credits. (Core) A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the earliest colonial settlements through the end of post-Civil War Reconstruction—roughly 1877. Profs. Mumford, Winpenny.

202 History of the United States since 1877

3 credits. (Core) A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the beginning of Reconstruction—roughly 1865—through the present. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. (Core) A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

215 English History to 1603

3 credits. (Core) Medieval England from the Anglo-Saxons to Queen Elizabeth I, with emphasis on the constitutional and legal foundations, and the role of the Church. Prof. Poole.

216 English History since 1603

3 credits. (Core) Modern Britain since James I, with emphasis on the evolution of the parliamentary form of government and Britain's role as a world power. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. (Core) Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Prof. Kreider.

218 Europe in the Twentieth Century

3 credits. (Core) An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Prof. Kreider.

219 History of Tsarist Russia

3 credits. (Core) The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Prof. Kreider.

220 History of Soviet Union

3 credits. (Core) A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Prof. Kreider.

223 History of China

3 credits. (Core) A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

224 History of Japan

3 credits. (Core) A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

306 Recent History of the United States

3 credits. (Core) An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. (Core) The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

308 Technology and American Society

3 credits. (Core) The impact of technology on the development of American society, and also the extent to which American values have shaped the technology. Focus is primarily on the 19th and 20th centuries—from the Age of Steam to the Space Age. Prof. Winpenny.

310 American Ethnic History

3 credits. (Core) A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. (Core) The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. (Core) Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

321 History of Non-Violence

3 credits. (Core) An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. Kreider.

327 History of Africa

3 credits. (Core) A survey of African history and culture using an interdisciplinary approach, with emphasis on the history of the politics, cultures, arts, and societies of the African people. Prof. Vassady.

328 Modern Africa

3 credits. (Core) Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330-339 Studies in United States History

3 credits for each course. (Core) An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340-349 Minorities in United States History

3 credits for each course. (Core) An incisive view of minorities in a society venerating majoritarian rule: for example, Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff

370-379 Special Topics

3 credits. (Core) Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. (Core) The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. (Core) A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Prof. Mumford.

406 Social and Intellectual History of the United States

3 credits. (Core) An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Prof. Mumford.

411 Greek and Roman History

3 credits. (Core) Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. By special arrangement. Prof. Poole.

412 Medieval History

3 credits. (Core) Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. By special arrangement. Prof. Poole.

480-489 Independent Study

Variable credit. (Core) Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites:* approval of the department chair and the Provost, permission of instructor. Staff.

498-499 History Seminar

3 credits. (Core) A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell (*Chair*), Bossler, D. Koontz, Shubert
(*Acting Chair, fall semester, 1988-89*)

Associate Professors R. Dolan, J. Koontz, Morse

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

These courses also satisfy the General Education Core requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers six concentrations. The *pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The *general mathematics concentration* is for those who want the flexibility to design their own programs in mathematics.

For the nonmathematics major, the department offers a choice of two minors: *in statistics* and *in mathematics*. Each is developed on a common foundation of twelve hours of calculus and three hours of linear algebra. The *minor in statistics* is designed to provide training specifically in this field, while the *minor in mathematics* allows the student the flexibility of course selection. In addition to Mathematics 121, 122, 222, and 201, the minor requirements are as follows:

The *minor in statistics* requires Mathematics 151, 252, 351, and 352.

The *minor in mathematics* requires three courses above the level of Mathematics 212, at least one of which must be selected from Mathematics 301, 303, 421, 422.

All mathematics majors are required to take a minimum of 42 hours in mathematics courses, including Mathematics 121, 122, 151, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 212).

The *pure mathematics concentration* requires Mathematics 301, 421, 422, and three courses from other acceptable mathematics electives.

The secondary education concentration (required for secondary education certification) requires Mathematics 301, 341, 351, 421, and two courses from other acceptable mathematics electives. In addition, Psychology 105; Education 305, 225d, 415, 225e, 473.

The actuarial science concentration requires Mathematics 351, 352, 453, 362, and 331. In addition, Accounting 105, 106; Economics 101, 102. Also required is the passing of at least one examination of the Society of Actuaries by December of the senior year.

The statistics concentration requires Mathematics 252, 351, 352, 453, 331.

The computer science concentration requires Mathematics 303, 362, and three other acceptable mathematics electives, at least one of which must be 352 or 422; Computer Science 122, 221, 222, and one other 300- or 400-level computer science course except 321. (These computer courses also fulfill the modern language or computer skills requirement.)

The general mathematics concentration requires five acceptable mathematics electives, at least one of which must be 352 or 422.

011 Intermediate Algebra (Developmental Studies 011)

2 credits. The fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101 and 117. Credits do not count toward the 128 required for graduation. Fall semester. Staff.

101 Precalculus Mathematics

4 credits. (Core) Precalculus study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency)*. Fall semester. Staff.

117 Concepts of Calculus

4 credits. (Core) Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency)*. Staff.

121 Calculus I

4 credits. (Core) The basic concepts and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency)*. Staff.

122 Calculus II

4 credits. (Core) A continuation of 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry is also included. *Prerequisite: Mathematics 121*. Staff.

131 Finite Mathematics

3 credits. (Core) A study of various noncalculus topics, such as set theory, logic, probability, matrices, linear programming, and Markov chains. Applications are drawn from the biological and social sciences. *Prerequisite: Mathematics 151*. Spring semester. Staff.

151 Probability and Statistics

3 credits. (Core) The basic principles of probability, frequency distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and tools, and their relation to everyday life. Staff.

201 Linear Algebra

3 credits. (Core) A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, and linear transformations. *Prerequisite: Mathematics 121*. Prof. J. Koontz.

211 Concepts in Modern Mathematics I

3 credits. (Core) An introduction for liberal arts students and prospective elementary teachers to some of the concepts and applications of modern mathematics. Includes such topics as sets and functions, logic, measurement, metric system, introduction to the computer, numeration systems, and number theory. Meets core requirements only for elementary and early childhood education majors. Prof. R. Dolan.

212 Concepts in Modern Mathematics II

3 credits. (Core) A continuation of 211 for prospective elementary teachers. Topics include the structure of number systems, geometry, geometry of measurement, and an introduction to probability and statistics. Meets Core requirements only for elementary and early childhood education majors. *Prerequisite: Mathematics 211 or permission of instructor* Prof. Bossler.

222 Calculus III

4 credits. (Core) A continuation of 122, completing the basic topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122*. Staff.

231 Discrete Structures (Computer Science 321)

3 credits. Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. *Prerequisite: Mathematics 151*. Fall semester. Prof. Shubert.

252 Statistical Methods

3 credits. (Core) A continuation of material presented in 151. Statistical techniques useful in business, the social, physical, and life sciences emphasized. Topics include simple and multiple regression analysis, elements of experimental design, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151*. Spring Semester. Prof. Blaisdell.

301 Algebraic Structures

3 credits. (Core) A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201*. Fall semester, alternate years. Prof. Morse.

303 Applied Algebra

3 credits. (Core) A study of abstract algebra, stressing set-relation systems with specific attention to their applications in computer science and combinatorics, rather than the binary operation systems studied in MA 301. Topics include sets, binary relations, set functions, partial ordering, Boolean algebras, finite state machines, groups, and modular arithmetic. *Prerequisites: Mathematics 201, 231*. Spring, alternate years. Prof. Morse.

321 Differential Equations

3 credits. (Core) A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods of solutions are included. *Prerequisite: Mathematics 222*. Spring semester. Prof. Shubert.

324 Mathematical Models and Applications

3 credits. (Core) Survey of a number of mathematical topics and a variety of models in the social and life sciences. Problems provide motivation for the development of tools and techniques employed throughout applied mathematics: axiomatics, probability theory, matrix algebra, simulation, and linear programming. *Prerequisites: Mathematics 201, 222*. Spring, alternate years. Prof. Morse.

331 Operations Research

3 credits. (Core) A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: Mathematics 151, 201; CS 121*. Fall semester, alternate years. Prof. Shubert.

341 Modern Geometry

3 credits. (Core) The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall, alternate years. Prof. Morse.

351 Mathematical Statistics I

3 credits. (Core) A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's t, Snedecor's F, and normal distributions. *Prerequisite: Mathematics 222*. Fall, alternate years. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. (Core) A continuation of 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 201, 351.* Spring, alternate years. Prof. Blaisdell.

362 Numerical Analysis

3 credits. (Core) A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in engineering and the sciences. Topics include curve fitting and function approximation, numerical integration and differentiation, numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; CS 121.* Spring, alternate years. Prof. R. Dolan.

370-379 Special Topics in Mathematics

Variable Credit. (Core) Directed study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. (Core) A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, series of real numbers, limits and metric spaces, and continuity. *Prerequisites: Mathematics 201, 222.* Fall, alternate years. Prof. D. Koontz.

422 Real Analysis II

3 credits. (Core) A continuation of 421, including such topics as integration, differentiation, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring, alternate years. Prof. D. Koontz.

453 Regression and Time Series Analysis

3 credits. (Core) A study of the theory and application of statistical methodology pertaining to model building. The main topics are fixed effects analysis of variance models, multiple regression models, and time series analysis. *Prerequisite: Mathematics 352.* Spring semester, alternate years. Prof. Blaisdell.

480-489 Independent Study

Variable credit. (Core) Staff.

Education 305 Practicum in Secondary Education:

4 credits. *Prerequisite: Psychology 105; corequisite: Education 225d.* Prof. R. Dolan.

Department of Modern Languages

Associate Professors Daiga, Goodling
Assistant Professors Barnada, Trachte (*Chair*)

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture from which the language springs and which it expresses. The pragmatic virtues of a usable skill are joined with the humane values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by completing 30 credit hours in one language above 112. A minimum of 9 hours above 112 must be taken in residence at Elizabethtown College. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are encouraged to participate in the Brethren College Abroad program.

Department majors must complete the following courses: in residence—Modern Language 211, 212, and 311; 323 and a three-credit independent study project (481-490); in the Brethren Colleges Abroad Program—Advanced Conversation and Composition, Phonetics, French/German/Spanish History, and History of (French/German/Spanish) Literature. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are a minimum of 12 credits above Modern Language 112 in the following courses: Modern Language 211, 212, 311 and 312 or 323. The internship, Modern Language 318, is optional. After completing the required course work, students must take the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

A placement test is administered free of charge during the first week of classes and in spring semester, prior to fall registration. It may be taken at any other time during the academic year for the general college fee of \$25. All students with more than one year of language preparation must take the placement test before registering in language courses for academic credit.

*111 Fundamentals of Language and Culture (French, German, Russian, Spanish)

5 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and sociocultural awareness. Emphasis on culture-based documents and collateral laboratory assignments. Fall semester.

112 Fundamentals of Language and Culture

5 credits. (Core) Continuation of 111 with expansion of structures, contexts and cultural topics. Completes bachelor of arts language requirement. *Prerequisite: 111 or placement by examination.* Fr 112 and Sp 112 are offered in the fall and spring semester.

*211 Oral Expression (French, German, Spanish)

3 credits. Emphasizes expanded functional proficiency, with particular attention to the speaking and listening skills. A functional-notional syllabus allows for progression through essential language functions presented in a variety of culturally authentic contexts. Students study selected contemporary texts to provide a frame for their discussions and to review grammatical structures. *Prerequisite: Modern Language 112 or permission of instructor.* Fall semester.

*212 Textual Analysis and Composition (French, German, Spanish)

3 credits. Presented as a writing workshop, stressing the skills needed for good expository writing. Students are actively involved in the editing and revising of their work. They study advanced grammatical structures and are involved in textual analysis of selected prose masterpieces in the foreign language. A continued emphasis on correct oral expression is made. *Prerequisite: Modern Language 211 or permission of instructor.* Spring semester.

*311 Making of Modern Society (French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena which are organized thematically (centralization, industrialization, class structure, education, etc.). By tracing the origins of current institutions, values, and attitudes, students gain a perspective on the historical and cultural forces which shaped the modern nation. Readings are taken from literary, sociological, and political sources. Films, slides and audio, and videotapes supplement written materials. *Prerequisite: Modern Language 212 or permission of instructor.* Fall semester.

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: Modern Language 211 or permission of instructor.* Spring semester.

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Modern Language 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. (Core) Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres.

371-380 Special Topics (French, German, Spanish, Russian*)

Variable credit. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability.

(*The Russian course provides a reading knowledge in the language.)

481-490 Independent Readings (French, German, Spanish)

Variable credit. (Core) For senior language majors. Independent projects in some area of language or literature. Project may fulfill literature Core requirement, provided topic relates to literature in the foreign language and not to the language itself.

Department of Occupational Therapy

Associate Professors Jones (*Chair*), Petersen
Assistant Professor Kelly
Instructor Farley

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy was initially accredited in 1976 by the American Occupational Therapy Association and the American Medical Association.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 220, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 402, 405, 407, 409, 410, 412, 421, 499; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; Anthropology 202 or 211; and Mathematics 151 and either 131 or 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Field Work Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of field work education. Students are responsible for their transportation and travel costs to and from assigned clerkship and field work centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II field work experience in the event these are not provided by the affiliated hospital or clinic.

The student may select either of the following options with faculty approval:

First Option: The student may complete three years of academic work followed by three months of Level-II field work experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II field work the next summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II field work experience.

Additional Field Work Education

After completing the required six months of Level-II field work, the student may elect to complete additional Level-II field work. This study may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education.

Related Expenses

Additional expenses for the occupational therapy student normally include insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association at the reduced student rates.

National Certification Examination

Upon being awarded the degree in occupational therapy and successful completion of Level-II field work, the student is eligible to sit for the national certification examination, held twice a year, usually in July and January.

Admission Requirements for the Department

1. PRIOR TO ADMISSION INTO THE DEPARTMENT:

- a. The student must submit an application to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. *Due to course sequencing, the department does not accept transfer students from within or outside the college.*
- b. The student has an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- c. The Occupational Therapy faculty selects the students for the next academic year and submits their names to the Director of Admissions.
- d. The Department of Occupational Therapy requires that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a problem (physical or emotional) arise which the Department feels may jeopardize the student's participation in the program.

2. EVALUATION AFTER ADMISSION INTO THE DEPARTMENT:

- a. Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a

student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:

- (1) have at least a 2.5 average in all courses required for the major (both occupational therapy and related requirements) at the end of the sophomore year.
- (2) Obtain grades of at least C or better in OT 303, 316 and 405.
- (3) Satisfactorily meet the standards and requirements in all phases of field work education including Level-I field work, laboratory, and Level-II field work experience.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for non-majors.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for non-majors.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected activities, fine motor and product oriented as well as games and gross motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy. Emphasis on normal movement and patterns of movement including body mechanics, grasp and gait analysis. *Prerequisites: Biology 201; and permission of instructor for non-majors.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, collage, and blockprinting. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth Through Adolescence

3 credits. An examination of normal human development along the birth-through-adolescence segment of the developmental continuum. Emphasis is on sensorimotor development and occupational behaviors in the areas of exploration, play, self-care, educational, leisure, prevocational and social performance. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and Occupational Therapy 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: OT 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. The course format includes lecture, seminar, laboratory and Level I Fieldwork Experience. *Corequisite: Pediatric Conditions. Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies, and professional reporting are coordinated with Level-I Fieldwork experience, lecture, laboratory, and seminar. *Prerequisites: Psychology 105, Occupational Therapy 223, 224. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester.

370–379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor.*

402 Gerontic Occupational Therapy

2 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as gerontic occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Occupational Therapy majors only.* Spring semester only.

405 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approach used to enhance the function of individuals with major physical disabilities. Lecture, laboratory, seminar, and Level-I Fieldwork experience. *Prerequisite:* Occupational Therapy 218; *Corequisite:* CPR certification. *Occupational Therapy majors only.* Fall semester.

407 Physical Pathology

2 credits. Lectures relative to etiology, prognosis and treatment and major pediatric diagnoses of other general medical conditions. *Permission of the instructor for non-majors.* Fall semester.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. *Prerequisites:* Mathematics 151, 252 suggested. *Permission of the instructor for non-majors.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the management, supervisory functions of administering an occupational therapy department, in traditional and non-traditional settings. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, program evaluation, and legal and ethical issues. *Occupational Therapy majors only.* Spring semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. *Prerequisite:* Occupational Therapy 409. *Occupational Therapy majors only.* Spring semester.

419 Prevocational Activities

1 credit. A study of the principles and techniques used in the vocational assessment of selected patients with potential for employment. *Prerequisite:* activity courses are the foundation for discussion and laboratory experiences. *Occupational Therapy majors only.* Fall semester.

420 Sensory Integration

1 credit. Introduction to study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only.* Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite:* Biology 201. *Occupational Therapy majors only.* Fall semester.

422 Kinesiology II

2 credits. Advanced principles of movement, including the influence of cultural, psychological, and physiological factors. Use of movement in the evaluation and habilitation/rehabilitation of individuals with dysfunction. *Occupational Therapy majors only.* Spring semester.

480-489 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

499 Senior Seminar

1 credit. A culmination and synthesis of the major courses. Course enables students to discuss current issues in the profession and relate academic and clinical experiences in preparation for the final clinical FW II and in preparation for sitting the certification examination. Content will vary according to the issues presented. A variety of faculty will be involved along with outside discussants. *Occupational Therapy majors only.* Spring semester.

Department of Philosophy

Professors Spiegler, Sutphin, (*Chair*)

Assistant Professor Matteo

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A *major in philosophy* requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. The following seven courses are required: Philosophy 105, 110, 115, 201, 240, 310, and 490, the Senior Thesis. In addition, the student must elect two from the following: Philosophy 302, 313, 320. The remaining three hours may be taken from any of the other offerings in the department.

A *minor in philosophy* requires six courses in Philosophy, with the following distribution: Philosophy 105, 110, 115, 201, and 310. An additional three hours must be selected from the following: Philosophy 240, 302, 313, or 320.

105 Introduction to Philosophy

3 credits. (Core) An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Prof. Sutphin.

110 Logic and Critical Thinking

3 credits. (Core) A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and truth. The nature of inference from premises to conclusion, rules for deductive and inductive process; informal inferences and fallacies, and theory of definition. Prof. Sutphin.

115 Ethics

3 credits. (Core) A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo. (Students will not receive credit for both Ph 115 and Rel 215.)

170-79 Special Topics in Philosophy

3 credits. Courses of an experimental nature offered at the Freshman and Sophomore level. Staff.

201 Ancient and Medieval Philosophy

3 credits. (Core) An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. (Core) An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Prof. Sutphin.

240 Modern Philosophy

3 credits. (Core) A study of enduring issues in the writings of the 17th and 18th century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. (Core) A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. (Core) The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Spiegler.

310 Contemporary Philosophy

3 credits. (Core) A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Prof. Sutphin.

313 Philosophy of Science

3 credits. (Core) An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Prof. Sutphin.

320 Philosophy of Religion

3 credits. (Core) A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Prof. Sutphin.

370-79 Special Topics in Philosophy

3 credits. (Core) a constantly changing specialized study within the field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480-89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Department of Physical Education and Health

Associate Professor Ober (*Chair and Athletic Director*)
Assistant Professors Kauffman, Whitmore
Staff: Mehrens, Roderick

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social

and moral standards, such as sportsmanship, teamwork, tolerance and other character traits which come from properly conducted play.

All students are required to take four semester hours of physical education courses, of which two may be taken in aquatics. Students must take at least one semester of an aquatics activity or successfully complete a proficiency test in swimming, which must be taken no later than the fall of the sophomore year. This test may be taken only once. A transfer student who desires to take the test must do so at the beginning of his or her first semester.

The remaining physical education requirements may be satisfied by electing any of the courses offered, except Physical Education 285. No more than six semester hours of physical education may be counted toward the 128 hours required for graduation. Physical Education 270 counts as three credits towards graduation, but only as one activity towards meeting the Core requirements.

105 Beginning Swimming (women)

1 credit. (Core) Elementary-level instruction in the basic strokes for non-swimmers.

115 Intermediate Swimming (women)

1 credit. (Core) Instruction in the techniques of the basic strokes, survival swimming, and water safety.

125 Beginning Swimming (men)

1 credit. (Core) Elementary-level instruction in the basic strokes for non-swimmers.

135 Intermediate Swimming (men)

1 credit. (Core) Instruction in the techniques of the basic strokes, survival swimming, and water safety.

145 Field Hockey-Volleyball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

150 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

155 Tennis-Bowling (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

160 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

165 Golf-Badminton (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

185 Basketball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

190 Horsemanship

1 credit (Core) Basic riding positions, body balance, equine safety. Discuss equine behavior, care, tack, styles and management. Graded pass/no pass.

191 Advanced Horsemanship

1 credit (Core) Continues at student level of progress. Concentration on a specific area, i.e., dressage, jumping, or training a young or green horse. Graded pass/no pass.

192 Gymnastics

1 credit (Core) a developmental approach to increasing flexibility, strength in beginning gymnastic skills. Manual resistance strength training, spotting and teaching techniques. Graded pass/no pass.

193 Self Defense

1 credit (Core) Provides tools to live a safe life without fear. Hands on activities for defense are included. Graded pass/no pass.

194 Skiing

1 credit. (Core) Instruction at the individual's level of skill, after screening. Includes basic safety and slope time. Graded pass/no pass.

195 Soccer

1 credit. (Core) Rules, playing techniques, and skill development.

205 Archery-Badminton (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

210 Basketball (men)

1 credit. (Core) Rules, playing techniques, and skill development. Spring semester.

217 Advanced Life Saving

1 credit. (Core) Instruction and practice in life-saving, water safety, and pool management. Meets Red Cross certification requirements. Graded pass/no pass.

218 Water Safety Instruction (coed)

1 credit. (Core) Advanced lifesaving skills, swimming instruction, and use of pool equipment. Meets Red Cross Instructor certification requirements. Graded pass/no pass. *Prerequisite: current Senior Lifesaving Certificate.*

225 Tennis (women)

1 credit. (Core) Rules, playing techniques, and skill development. Fall semester.

235 Tennis (men)

1 credit. (Core) Rules, playing techniques, and skill development. Fall semester.

240 Bowling (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

245 Racquetball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

246 Racquetball (men)

1 credit. (Core) Rules, playing techniques, and skill development.

250 Volleyball (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

255 Handball-Racquetball (men)

1 credit. (Core) Rules, playing techniques, and skill development.

260 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

265 Physical Conditioning (coed)

1 credit. (Core) Techniques of exercise, jogging, weight training, and body development.

270 Advanced Individual Sports

3 credits. (Only one hour credit counts for Core.) Methods, techniques, and teaching skills in selected sports. Summer session only.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades. *Required of Elementary education majors.*

290 Interpretive Movement (Same as Dance 101)

1 credit. (Core) Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Prof. Williams-Henry.

295 Introduction to Ballet (Same as Dance 102)

1 credit. (Core) Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Prof. Williams-Henry.

370-380 Special Topics in Physical Education (coed)

1 credit. (Core) Such physical activity instruction as bicycling for which there may be an extra charge. Graded pass/no pass.

481-490 Self-Directed Physical Education Activity

1 credit. (Core) For the student who attends Evening Division, or studies abroad, or has extenuating circumstances which prohibit the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

Department of Physics and Pre-Engineering

Professor Ranck (*Chairman*)

Associate Professor Thompson

Assistant Professors Gaffney, Stuckey

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics and Earth Science are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in contemporary society. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, many of which are intended to develop students' abilities for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in departmental programs commonly go on to careers in physics, engineering, computer technology, and teaching, or to graduate school.

The Department offers four programs: 1) a Bachelor of Science in Physics, 2) a cooperative program in engineering at the completion of which the student is awarded a bachelor of science degree from The Pennsylvania State University and a bachelor of arts degree from Elizabethtown College, 3) two options for secondary education majors: physics or general science with a concentration in physics, and 4) a physics minor. In addition, students majoring in physics may pursue a premedical program.

Physics majors are required to take Physics 101, 102, 202, 204, 221, 241, 301, 302, 351, 352, 361, 362, 421, 422, 461, 462, 491, 492, and two of 423, 424, 471, 472; Chemistry 101, 104; Mathematics 121, 122, 222, 201 and 321; Computer Science 115.

Engineering majors complete three years at Elizabethtown College and two years at The Pennsylvania State University. To be eligible for admission at The Pennsylvania State University, a student must have a 3.0 cumulative average at Elizabethtown College and be recommended by Elizabethtown College. At Elizabethtown College, the student will complete Physics 101, 102, 202, 204, 221, 241, 301, 302, 351, 352, 361, 362; Drawing 115, 116; Mathematics 121, 122, 222, 201, 321; Chemistry 101, 104; Computer Science 115.

Secondary education majors in physics are required to take Physics 101, 102, 202, 204, 221, 241, 351, 361, 362; Chemistry 101, 104; Biology 105, and 106 or 108; Mathematics 121, 122, 201; Computer Science 115; Psychology 105; Education 305, 308, 309, 415, 473; and three additional credits of electives from the offerings of the Department of Physics and Earth Science.

Secondary education majors in general science (physics concentration) should consult the interdisciplinary section of the catalog for a complete description and a listing of required courses.

Physics minors are required to take Physics 101, 102, 202, 204, 221; and one additional physics course selected from those taken by majors. This minor will allow the majors in computer science, mathematics, biology, and chemistry to develop a broad-based competency in basic physics. It is also suitable for majors in other departments who enjoy the rigors of physics but who are unable to fit a full physics major program into their schedules. (Students should carefully check the course listing for the prerequisites for each physics course.)

Premedical students may also major in physics. They must meet the requirements for a Bachelor of Science in Physics but with additional courses in biology and chemistry. More details are given in the Premedical and Allied Health Programs listing in the interdisciplinary section.

101 Physics I

4 credits. (Core) An investigation of the basic principles of physics. Topics include classical kinematics and dynamics (friction, gravity, springs, tension, compression, buoyant forces, linear and angular momentum, torque, and statics), energy (work and potential energy), and the kinetic theory of matter. Hours: lecture 3, laboratory 3. *Prerequisite or Corequisite: Mathematics 121.* Fall semester. Prof. Gaffney.

102 Physics II

4 credits. (Core) A continuation of Physics 101. Topics include electricity, magnetism, an introduction to special relativity, and geometrical optics. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 101.* Spring semester. Prof. Gaffney.

111 Classical Physics

4 credits. (Core) Introduction to the concepts and methods of physics through a study of the laws of motion, energy, electricity, light, relativity, radioactivity, and other topics of interest. Hours: lecture 3, laboratory 3. *Prerequisite: High school algebra and trigonometry.* Fall semester. Prof. Stuckey.

112 Astronomy

4 credits. (Core) A study of the structure and evolution of stars, planetary systems, and galaxies, and less familiar astronomical objects such as quasars, pulsars, and black holes. Laboratories provide an opportunity to observe the planets, stars, clusters, and galaxies and some practical experience in determining astrometric quantities. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Spring semester. Prof. Schaeffer.

113 Spacetime Physics

4 credits. (Core) A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114 Cosmology

4 credits. (Core) A study of the origins, evolution, and future of the universe. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra and trigonometry.* Spring semester. Prof. Stuckey.

116 Quantum Theory and Reality

4 credits. (Core) A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Hours: lecture 3, laboratory 2. Spring semester. Prof. Ranck.

202 Waves and Energy Transfer

4 credits. (Core) A study of energy transfer including convection, conduction, radiation and waves. Waves are considered in detail, including both their mathematical description and physical manifestations. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 102; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Ferruzza.

204 Thermodynamics

3 credits. (Core) An introduction to thermodynamics as applied to physical and chemical equilibria in ideal and non-ideal homogenous and heterogeneous systems. Phase changes, kinetics, ionic solutions, and electrochemistry are also treated. [This course is the same as Chemistry 242.] Hours: lecture 3. *Prerequisite: Physics 102, Mathematics 122; Prerequisite or corequisite: Chemistry 104 or 114.* Spring semester. Prof. Reeder.

221 Modern Physics

4 credits. (Core) Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. [This course is the same as Chemistry 343.] Hours: lecture 3, laboratory 4. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Prof. Rutter.

242 Computer Systems Interfacing

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. [This course is the same as Computer Science 333.] Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

301 Mechanics

3 credits. (Core) An intermediate-level course in mechanics covering generalized coordinate systems, systems of many particles, rigid-body dynamics, central forces, oscillations, collisions, and the formalisms of Lagrange, Hamilton, and Jacobi. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, Mathematics 321.* Fall semester. Prof. Gaffney.

302 Electromagnetism

3 credits. (Core) An intermediate course in electromagnetism, including electrostatic field theory, dielectrics, magnetic phenomena, Maxwell's equations, electromagnetic waves, and special relativity. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Prof. Gaffney.

351, 352 Advanced Physics Laboratory I, II

2 credits. Advanced laboratory courses with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. A wide variety of experimental techniques and analyses are used. Individual experimental design is emphasized. Hours: laboratory 6. *Prerequisites: Physics 202, 221, 241.* Fall semester, Spring semester. Prof. Stuckey.

361, 362 Seminar in Physics and Engineering I, II

0.5 credits. A weekly presentation and discussion by students and faculty of topics of current interest in physics, earth science, and engineering. Hours: seminar 1. Fall semester, Spring semester. Staff.

421 Quantum Physics

3 credits. (Core) A systematic development of quantum mechanics including the Schrodinger, Heisenberg, and Dirac formalisms and their interpretations. Topics include the standard solutions to the classical model problems of quantum mechanics, perturbation theory, scattering theory. Hours: lecture 3. *Prerequisites: Physics 221, 301, 302, Mathematics 201, 321.* Fall semester. Staff.

422 Statistical Physics

3 credits. (Core) The thermodynamics and statistical mechanics of physical systems based on the principle of maximum entropy. Topics include the ideal gas, Fermi-Dirac and Bose-Einstein "gases," electrons in metals, blackbody radiation, and elements of transport theory. Hours: lecture 3. *Prerequisite: Physics 421.* Spring semester. Staff.

423 General Relativity

3 credits. (Core) The theory of general relativity, including the Schwarzschild and Kerr-Newman black holes, the Robertson-Walker cosmology, weak fields and gravity waves. Hours: lecture 3. *Prerequisites: Mathematics 321, Physics 221 and 302 or permission of the instructor.* Fall semester, alternate years. Staff.

424 Condensed Matter Physics

3 credits. (Core) The application of quantum theory to the study of solids. Topics include Bloch's theorem, the reciprocal lattice, phonons, electronic states, transport and optical properties, the Fermi surface, and elements of superconductivity. Hours: lecture 3. *Prerequisite: Physics 421 or permission of the instructor.* Spring semester, alternate years. Staff.

461, 462 Seminar in Physics III, IV

0.5 credits. A weekly presentation and discussion by students and faculty of topics of current interest in physics, earth science, and engineering. Hours: seminar 1. Fall semester, Spring semester. Staff.

471, 472 Topics in Physics

3 credits. (Core) Topics in physics not covered in other courses. Hours: lecture 3. *Prerequisite:* *Permission of the instructor.* Alternating Fall and Spring semesters. Staff.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite:* *Permission of the instructor.* Staff.

491, 492 Research in Physics I, II

2 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite:* *Permission of the instructor.* Fall semester, Spring semester. Staff.

DR 115 Graphics and Descriptive Geometry I

2 credits. Study of engineering-related drawing, including constructions, lettering, orthographic projection, sketching, dimensioning, and pictorial drawing. Hours: lecture 1, laboratory 5. Fall semester. Prof. Frey.

DR 116 Graphics and Descriptive Geometry II

3 credits. A continuation of Drawing 115. Topics include spatial relationships of points, lines and planes, intersections of objects, developments, cartography, vectors, graphs. Instruction and practical exercises are given in computer aided drafting (CAD). Hours: lecture 1, laboratory 7. *Prerequisite:* *Drawing 115.* Spring semester. Prof. Frey.

Earth Science

ES 105 Field Earth Science

8 credits. (Core) An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite:* *Permission of the instructor.* Summer session. Prof. Thompson.

ES 111 Geology I (Materials and Dynamics)

4 credits. (Core) An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity, and geological time. Hours: lecture 3, laboratory 2. Fall semester. Prof. Thompson.

ES 112 Geology II (Origin of Landscape)

4 credits. (Core) The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. *Prerequisite:* *ES 111.* Spring semester. Prof. Thompson.

ES 115 Meteorology

4 credits. (Core) General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Laboratories include collection and analysis of weather and climatic data, use of special charts and maps, and establishment of physical principles through experiment. Hours: lecture 3, laboratory 2. Fall and spring semesters. Prof. Thompson.

ES 370-379 Special Topics in Earth Science

Variable credits. (Core) Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite:* *Permission of the instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. (Core) Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite:* *Permission of the instructor.* Prof. Thompson.

Department of Political Science

Professor Selcher (*Chair*)

Associate Professor McDonald

Assistant Professor McClellan

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessman. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 117, 118, 202, 205, 301, 308, and 330, and twelve credits of political science electives. In addition, Mathematics 151 and Sociology 331 are required. General electives from the other social sciences are encouraged.

For *a minor in political science*, the student must successfully complete 21 hours of course work, composed of the following political science courses: 117, 118, 202, 205, and 301 or 308, and two elective 300/400-level courses. The electives must be chosen in consultation with the department. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/public relations: Political Science 323, 333 (Mass Media and American Politics); (2) law/paralegal/criminal justice: Political Science 329, 401; (3) international affairs: Political Science 305, 327, 342, 413; (4) political theory: Political Science 329, 382; (5) public administration: Political Science 471; and (6) business administration: Political Science 334 (Government and Business).

The Department participates in *the secondary school certification in social studies program* and *the forestry and environmental management major*, offering a political science concentration in each. (See the detailed descriptions in the interdisciplinary section of this catalog.)

105 Introduction to Government

3 credits. (Core) Introduction to the basic terms, concepts, methodologies, and ideas of the tradition of Western political thought with a special emphasis on those ideas which have contributed to the development of the American political order. Prof. McDonald.

117 American National Government

3 credits. (Core) Analysis of the development of the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Prof. McClellan.

118 State and Local Government

3 credits. (Core) Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Prof. McClellan.

202 Political Theory

3 credits. (Core) Analysis of the development of significant political ideas from the Greek city-state to the present. Spring semester. Prof. McDonald.

205 International Relations

3 credits. (Core) Survey of political, economic, legal, psychological, and military features of international relations with consideration of national interest, foreign policy, diplomacy, alliances, and nuclear deterrence. Prof. Selcher.

301 Comparative Governments

3 credits. (Core) A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

305 American Foreign Policy

3 credits. (Core) Analysis of United States foreign relations since World War II, with emphasis on the development of current major issues, the domestic and bureaucratic politics of foreign relations, and policy options in current and future problems. Prof. Selcher.

308 Public Administration

3 credits. (Core) A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. (Core) An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects of nuclear war are among some of the topics examined. Fall semester. Prof. McDonald.

327 Latin American Politics

3 credits. (Core) Political culture and processes, with country studies and development models to illustrate political styles and approaches to current issues. Prof. Selcher.

329 American Political Thought

3 credits. (Core) Historical analysis of major American political thinkers from the Puritans to the present with special consideration of the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. *Prerequisite: Mathematics 151.* Prof. Kraybill.

333-339 Topics in Public Policy

3 credits. (Core) Detailed examination of topics in policy development and analysis, such as government regulation of business, the mass media and American politics, and public policies in such areas as health and education. Prof. McClellan.

342 Politics of Developing Nations

3 credits. (Core) An analysis of interdisciplinary theories of political development with application to specific case studies of contemporary nation-building in transitional societies. Spring semester. Prof. Selcher.

370-379 Special Topics

3 credits. (Core) Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

382 Modern Ideologies

3 credits. (Core) A survey of Marxist, socialist, and democratic theories and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

401 Constitutional Law

3 credits. (Core) History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Fall semester 1988. Prof. Gliptis.

413 U.S. Security Policy

3 credits. (Core) Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite: Political Science 205 or 305 or permission of instructor.* Spring semester. Prof. McDonald.

471 Capitol Semester Internship

6 credits. Applied field experience in public administration as a junior assistant in the daily operations of state or local government agencies. *Prerequisites: Political Science 308 and permission of instructor.* Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Associate Professors Dennis, Eiserer, Ellsworth (*Chair*)
Assistant Professors Rider, Teske

Bachelor of Arts; Bachelor of Science

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers two degrees: the Bachelor of Arts in Psychology and the Bachelor of Science in Psychology. These degrees differ in their General Education Core requirements. The department offers a minor in psychology and offers a concentration for students pursuing the secondary education certification in social studies (see the interdisciplinary section of this catalog).

Courses required for both the *bachelor of arts* and the *bachelor of science* degrees are Psychology 105, 106, 213, 222, 317, 321, 402, 413 or 414, 425 or 435, and psychology electives for a total of 33 credit hours, and Mathematics 151. For the *bachelor of science* degree, the student is required to complete three credit hours of computer science.

Courses required for the *minor* are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/400) courses, and Mathematics 151. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

105 General Psychology

3 credits. (Core) An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. (Core) The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105.* Spring semester. Prof. Ellsworth.

201 Addictions

1 credit. The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite: Psychology 105 or permission of the instructor.* Prof. Overdorf.

213 Research Methods and Data Analysis

4 credits. (Core) The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105, Mathematics 151 (or as a corequisite). Fall semester. Prof. Ellsworth.

222 Physiological Psychology

3 credits. (Core) Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite:* Psychology 105. Spring semester. Prof. Eiserer.

225 Developmental Psychology

3 credits. (Core) Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite:* Psychology 105. Prof. Rider.

235 Social Psychology

3 credits. (Core) The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as conformity, prejudice, aggression, pro-social behavior, attraction, and love. *Prerequisite:* Psychology 105. Prof. Teske.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite:* music major or permission of instructor. Spring semester. Prof. Shinn.

317 Learning

4 credits. (Core) Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 213. Fall semester. Staff.

321 Theories of Personality

3 credits. (Core) A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite:* Psychology 105. Fall semester. Prof. Teske.

322 Abnormal Psychology

3 credits. (Core) A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite:* Psychology 105. Spring semester. Prof. Dennis.

334 The Exceptional Child

3 credits. (Core) A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite:* Psychology 105 or permission of instructor. Spring semester. Prof. Rider.

370-379 Special Topics

Variable credit. (Core) Directed study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite:* permission of instructor. Staff.

401 Counseling Psychology

3 credits. (Core) An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites:* Psychology 105 and permission of instructor. Fall semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. (Core) A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite:* Psychology 105. Fall semester. Prof. Dennis.

413 Perception

3 credits. (Core) A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of instructor. Spring semester 1989. Prof. Eiserer.

414 Memory and Thinking

3 credits. (Core) A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of instructor. Prof. Ellsworth.

425 Advanced Development Psychology

3 credits. (Core) A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project. *Prerequisites:* Psychology 213, 225, and junior standing, or permission of instructor. Fall semester. Prof. Rider.

435 Advanced Social Psychology

3 credits. (Core) A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites:* Psychology 213 and 235 or permission of instructor. Fall semester 1988. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites:* Psychology 105 and permission of instructor. Prof. Dennis.

480-489 Independent Study in Psychology

Variable credit. (Core) This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite:* permission of instructor. Staff.

491-492 Research Practicum

Variable credit. (Core) Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites:* Psychology 213 and permission of instructor. Staff.

Department of Religion

Professors Clemens, Puffenberger (*Chair*)
Assistant Professor Bucher

Bachelor of Arts

The Department of Religion seeks to broaden the student's liberal education by pursuing creative ventures which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other non-Christian faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a complex and pluralistic religious milieu. Because of this diversity, the study of religion includes a variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religion major is designed to serve as a pre-professional foundation for those students wishing to pursue its study beyond

the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields). A major is to be planned in consultation with the department faculty and chair in order to assure a balanced blend of courses in several subject areas.

A **major** in Religion comprises ten courses (30 hours), including a required three-hour Senior Research Project/Thesis. Course selection should include at least one course from each of the following categories: biblical studies; ethics and theology; comparative religions; and peace studies.

A **minor** in Religion consists of six courses (18 hours) covering at least three of the four categories listed above.

101 Introduction to the Hebrew Bible

3 credits. (Core) A study of the literature of the Hebrew Bible, with emphasis on the Pentateuchal and historical narratives and the wisdom books of Job and Ecclesiastes, using the tools of historical, literary, and social analysis. Prof. Bucher.

102 Introduction to the New Testament

3 credits. (Core) A study of the literature of the New Testament and the historical development of the first-century Church, using the tools of historical, literary, and social analysis. Prof. Bucher.

115 Religions of the Modern World

3 credits. (Core) A survey of the major Eastern and Western religious traditions from phenomenological, cultural, and comparative points of view. Prof. Puffenberger.

170-179 Special Topics in Religion

3 credits. (Core) Occasional courses of an experimental nature offered at the freshman-sophomore level. No prerequisites required. Staff.

205 Contemporary Religious Issues

3 credits. (Core) A survey of relevant problems and issues on the contemporary religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism in America. Staff.

215 Social Ethics

3 credits. (Core) The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens. (Students will not receive credit for both Ph 115 and Rel 215.)

221 Western Religions

3 credits. (Core) An introduction to the major religious traditions of the near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. (Core) An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shinto. Prof. Puffenberger.

230 Religion in America

3 credits. (Core) Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, and the identity and integrity of each separate tradition. Prof. Clemens.

315 Attitudes Toward Death

3 credits. (Core) A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. It presupposes the notion that the best preparation for life is an in-depth study of its non-existence. Prof. Puffenberger.

320 Biblical Theology

3 credits. (Core) A study of the nature and meaning of the redemptive acts of God in the history of the Hebrews and early Christians. *Prerequisites:* Religion 101, 102. Staff.

330 Anabaptist and Pietistic Movements

3 credits. (Core) A study of the historical and theological backgrounds of the Anabaptist and Pietistic movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Staff.

331 Contemporary Theology

3 credits. (Core) A deeper exposure to some aspect or area of theological thinking or the study of a particular theologian or group of theologians. *Recommended:* Religion 205. Staff.

340 History of Christian Thought

3 credits. (Core) A survey of representative thinkers in the history of the Christian Church and an examination of the central doctrines of the Christian faith. *Recommended:* Religion 205. Staff.

370-379 Special Topics in Religion

3 credits. (Core) Occasional courses offered, on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest within the field of religion. Includes such topics as: Liberation Theology; Evangelical Theology; Civil Religion; Esoteric Religions; Utopian Communities; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; The Church's Role in Social Change; The Biblical Prophets; Wisdom Literature; War and Peace in the Religions; etc. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religion minors by special request. Staff.

490 Senior Research/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Sociology, Anthropology, and Social Work

Professors J. Hostetler, Kraybill

Associate Professors Lehr (*Chair*)

Assistant Professors Bergel (*Director of the Social Work Program*),
B. Hostetler

Bachelor of Arts and Bachelor of Science in Sociology-
Anthropology

Bachelor of Arts in Social Work

The programs in this department provide for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology and social work go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social work, law, and business administration. Some move directly into careers in personnel work, social research, adult and juvenile probation, private and governmental social welfare agencies, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers two basic majors. The *sociology-anthropology major* leads to either a bachelor of arts or bachelor of science degree and the *social work major* leads to a bachelor of arts degree. The Department also offers a minor in sociology and a concentration in anthropology and Anabaptist and Pietist studies.

The major in sociology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities.

The major in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. Courses and field experiences emphasize the distinctiveness and the similarity of various social service delivery systems. The program is accredited by the Council on Social Work Education.

The department also participates in the secondary education certification in social studies offering sociology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A *sociology-anthropology major* requires Sociology 101, 202, 203, 330, 331, 364, 498 and Anthropology 201, 202, and 360 plus a minimum of two other courses in Sociology, Anthropology, or Anabaptist and Pietist Studies.

The *Anabaptist and Pietist Studies Concentration* (12 hours) requires Sociology 361, 362, 365, and 363 or 364 or 481.

The *Anthropology Concentration* (12 hours) requires Anthropology 201, 202, 360 and one elective Anthropology course.

The *Sociology minor* requires 15 hours of course work including Sociology 101, 202, 203, 330, and 331.

The *Social Work Major* requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. Two reference rating forms completed by persons who know the applicant well, and one completed by the applicant.
3. Formal admittance to Elizabethtown College and to the Social Work Program.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The social work major requires the following courses: Biology 105 and 106 or 108; Sociology 101; Psychology 105, 225; Political Science 117; Economics 101; Mathematics 151; Social Work 151, 233, 240, 275, 330, 367, 368, 369, 398, 401, 470, 471, 498; plus nine credits of professionally related courses directed toward the student's professional goal and approved by the social work advisor. Spanish is the language preferred to meet the core requirement.

Sociology

101 Introduction to Sociology

3 credits. (Core) Basic concepts and theories relating to the study of society with emphasis on fundamental sociological methods and approaches. Staff.

151 Introduction to Social Welfare (Social Work 151)

3 credits. (Core) The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites or corequisites: Sociology 101, Psychology 105.* Spring semester. Staff.

202 Sociological Theory

3 credits. (Core) An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, including structural-functionalism, Marxism and interactionism, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite: Sociology 101.* Staff.

203 Social Organization

3 credits. (Core) A thorough analysis of the culture, structure, and change of contemporary industrial societies. Specific topics include the rational and nonrational bases of industrial society, work and leisure, politics, structured inequality and social movements. *Prerequisite: Sociology 101.* Staff.

215 Criminology

3 credits. (Core) Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Fall semester. Staff.

220 Race and Ethnic Relations

3 credits. (Core) Study of racial and other minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Staff.

233 Human Behavior in the Social Environment (Social Work 233)

3 credits. (Core) A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Psychology 225, Sociology 101.* Fall semester. Staff.

237 Group Dynamics

3 credits. (Core) A consideration of empirical research in group dynamics within the larger attempt to integrate a theoretical understanding of group dynamics with its experiential applications to everyday life. Staff.

301 Social Issues

3 credits. (Core) A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Staff.

305 Marriage and the Family

3 credits. (Core) A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 Sociology of Religion

3 credits. (Core) An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

330 Methods of Social Research

(Political Science 330, Social Work 330)

3 credits. (Core) Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisites: Sociology 101, and Mathematics 151.* Fall semester. Prof. Kraybill.

331 Social Statistics

3 credits. (Core) Application of the concepts of Mathematics 151, Probability and Statistics, to particular statistical procedures used in social research and analysis. *Prerequisite: Sociology 330, Political Science 330 or Social Work 330.* Spring semester. Prof. Kraybill.

339 Human Sexuality (Social Work 339)

3 credits. (Core) A study of sociosexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research, and selected issues. Staff.

342 Modern Corrections

3 credits. (Core) An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Spring semester. Staff.

344 Aging: Social Response and Implications (Social Work 344)

3 credits. (Core) An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Staff.

355 Women in Society (Social Work 355)

3 credits. (Core) A sociological inquiry into the current status of women in society. Topics include the socialization process, the relationship between gender and social institutions, and feminist theory and research that explain the roles and status of women. Staff.

358 Sociology of War and Peace

3 credits. (Core) A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Prof. Kraybill.

360 Sociology of Complex Organizations

3 credits. (Core) An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Staff.

361 Anabaptist and Pietist Groups Prior to 1850

3 credits. (Core) Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Prof. B. Hostetler.

362 Anabaptist and Pietist Groups Since 1850

3 credits. (Core) Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Prof. B. Hostetler.

363 Pacifism among Anabaptist and Pietist Groups, 1525–1985

3 credits. (Core) Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker-pacifist government, the pacifist comprises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth-century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Prof. B. Hostetler.

364 Amish Society

3 credits. (Core) An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society

3 credits. (Core) Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience, the course will be conducted as a seminar with the topics and groups varying by year. Prof. Kraybill.

366 Addiction and Society (Social Work 366)

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Staff.

371–380 Special Topics in Sociology

3 credits. (Core) Readings and discussion of topical areas of sociology. Topics may include, but not limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of instructor.* Staff.

481–490 Independent Study in Sociology

Variable credit. (Core) Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. (Core) The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of instructor.* Spring semester. Staff.

Social Work**151 Introduction to Social Welfare** (Sociology 151)

3 credits. The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites: Sociology 101, Psychology 105.* Spring semester. Staff.

233 Human Behavior in the Social Environment (Sociology 233)

3 credits. A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Sociology 101, Psychology 225.* Fall semester. Staff.

240 Basic Helping Processes

3 credits. Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

275 Rural Social Welfare Systems

3 credits. The development and organization of the rural community; its network of services designed to address community, family, and individual problems; community development and administration of social service programs. *Prerequisite: Social Work 151.* Spring semester. Prof. Bergel.

330 Methods of Social Work Research

(Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or corequisite: Mathematics 151.* Fall semester. Prof. Kraybill.

339 Human Sexuality (Sociology 339)

3 credits. A study of sociosexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Staff.

344 Aging: Social Response and Implications (Sociology 344)

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Staff.

355 Women in Society (Sociology 355)

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Staff.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Staff.

366 Addiction and Society (Sociology 366)

3 credits. (Core) An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Staff.

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 240.* Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite:* Social Work 367. Spring semester. Staff.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Corequisite:* Social Work 368. Spring semester. Staff.

371-380 Special Topics in Social Work

3 credits. (Core) Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

398 Urban Social Welfare Systems

3 credits. On-site study of a large urban area with emphasis on urban social problems and social systems and on comparisons between urban and small town-rural areas. *Prerequisite:* Social Work 275, or permission of instructor. Summer session after junior year.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social, economic, and political systems. *Prerequisites:* Social Work 398, Political Science 117, Economics 101. Fall semester.

470 Introductory Field Instruction

3 credits. Supervised field instruction for at least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. Fall semester.

471 Advanced Field Instruction

14 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner. *Prerequisite:* permission of instructor; *corequisite:* Social Work 498. Spring semester. Staff.

481-490 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite:* permission of instructor. Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite:* Social Work 470; *corequisite:* Social Work 471. Spring semester. Staff.

Anthropology

201 Physical Anthropology

3 credits. (Core) An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. Fall semester. Prof. Lehr.

202 Cultural Anthropology

3 credits. (Core) An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

211 World Cultures

3 credits. (Core) A survey of some of the peoples and cultures of the world from early times to the present with emphasis on physical, cultural, linguistic, and demographic factors. Fall semester. Prof. Lehr.

306 Indians of North America

3 credits. (Core) A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Prof. Lehr.

307 Peoples and Cultures of Africa

3 credits. (Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. (Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. (Core) Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Lehr.

371-380 Special Topics in Anthropology

3 credits. (Core) Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Prof. Lehr.

Spanish

See Department of Modern Languages, page 39.

Theatre

See Department of Fine and Performing Arts, page 32, 35.

Interdisciplinary Programs

Premedical and Other Health Professions Programs

Martin O.L. Spangler (*Chair, Health Professions Advisory Committee*)

Members: John A. Campbell, Jr., James L. Dively, Fred Hoffman, Paul Peterson, Frank Polanowski, Zoe Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions schools and/or students. The *biology pre-medical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 16. A second route is the *bachelor of science degree in biochemistry* (see page 22). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in

biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown, he or she will follow a *curriculum similar to that outlined below*, with minor variations depending upon several factors, such as starting level in English and mathematics. After completion of the freshman year, all students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Seven faculty are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into colleges of medicine; (2) to advise students on registration and preparation for medical college admission tests; (3) to assist students in the preparation and submission of applications to medical colleges; (4) to draft a composite letter of evaluation and endorsement for worthy candidates and to forward this information to the appropriate medical college admissions committees; (5) to offer assistance in preparing for medical college interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical college placement for advising and administrative purposes.

The premedical student will introduce himself to the Health Professions Advisory Committee early in his freshman year and will formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During March of the junior year, the *Committee* will hold *interviews* with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. During early April the student will again contact the Committee, this time to initiate the process of generating letters of recommendation and endorsement. Students are expected to solicit letters from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical college admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process himself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that pre-

medical students notify the Committee of changes in status of their applications so that the Committee can plan for this important stage of the admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

Representative First-Year Courses

Credits	Fall Semester
4	Biology 111
4	Chemistry 113
3	English*
4	Mathematics 121**
1	Physical Education
Credits	Spring Semester
4	Biology 112
4	Chemistry 114
3	English
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology major, and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University in Philadelphia. After completing 29 credits, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

For further details, contact Dr. Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a bachelor of science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's General Education Core in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the General Education Core requirements and accumulating at least 104 credits before transferring to Duke. The student spends at least two years at Duke's School of Forestry and Environmental Studies. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional year, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews.

There are variations of the schedule herein described. For further details, talk to Mr. Laughlin.

Majors shall complete all General Education Core requirements for the bachelor of science degree. Within the Core areas the following courses should be taken:

Mathematics Core (six hours): Mathematics 117, 151; 101, 121; or 121, 151. If 151 is not taken for Core, it is strongly recommended as an elective.

Science Core (eight hours): Majors with a concentration in biology should take chemistry; majors with concentrations in business or political science should take biology.

Social Science Core (nine hours): three of the nine hours must be in psychology or sociology/anthropology.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313-313L, 321, and two courses from Biology 215-215L, 235, 331, 332, or 347. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111, 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 101, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political 117, 118, 308, 334, 471. Minor concentration recommendations are Political Science 308, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry 113, 114; Physics 101, 102, two courses from Earth Science 107, 108, 111; Mathematics 101-121, or 121-151, Psychology 105; Education 305, 308, 309, 310, 415, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113, 114, 213, 214; and eight hours from among Chemistry 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology 111, 112; two courses from Earth Science 111, 112, 115; Physics 101, 102; Mathematics 101, 121, 122; Psychology 105; Education 305, 308, 309, 310, 415, 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 204, 221, 241; one additional course in physics or drawing; two courses from Biology 105, 106, 108; Chemistry 101, 104; two courses from Earth Science, 111, 112, 115; Mathematics 101, 121, 122; Psychology 105; Education 305, 308, 309, 310, 415, 473.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends

a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are:

Students must take one 24-hour major, two nine-hour cognates, and two six-hour cognates. All students must take the professional education sequence: Psychology 105; Education 305, 308, 309, 415, and 473.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics. The nine-hour cognate comprises Economics 101, 102, and three elective hours in economics. The six-hour cognate comprises Economics 101, 102.

History: The 24-hour major must include History 105, 201, 202, 390, one European history course beyond 105; one non-United States, non-European history course; and six elective hours in history. The nine-hour cognate comprises History 105, 201, 202. The six-hour cognate comprises History 105, 202.

Political Science: The 24-hour major must include Political Science 117, 118, 202, 205, 301, either 308, 330, or a 340 topic, and six elective hours in political science. The nine-hour cognate comprises Political Science 117, 118, 205. The six-hour cognate comprises Political Science 117, 118.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 225, 235, 321, 322 and 370. The nine-hour cognate comprises Psychology 105 and six elective hours. The six-hour cognate includes Psychology 105 and three elective hours in psychology.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 202, 203, 330, Anthropology 202, and nine hours planned in consultation with and approved by the social studies advisers in the Departments of Sociology and Education. The nine-hour cognate comprises Sociology 101, 203, and Anthropology 202. The six-hour cognate comprises Sociology 101, Anthropology 202.

Education 305 Practicum in Secondary Education: Social Studies

4 credits. Experience with and demonstration of various styles and strategies in the teaching of social studies in the secondary school classroom; in-school observation and internship, or para-professional experience are a part of the course. *Prerequisite:* Psychology 105; *corequisite:* Education 225d.

International Studies Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign cultures, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are just beginning to make themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The Business Department has an international business concentration designed specifically for business majors. Details of this option can be obtained from the Business Department. The structure of the minor for all other majors consists of:

1. **Foreign language competency:** 6 semester hours in oral expression, textual analysis, and composition beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level 1 + on the ACTFL/ETS scale.

2. **Three required foundation courses** (9 hours):

An 211	World Cultures
Ee 307	International Economics* or
Ec 371	Economic Development or
Ec 372	International Political Economy (only one economics course may be selected)
PS 205	International Relations

3. **Four elective courses** (12 hours) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 317	International Marketing
BA 371	International Business Management
Com 372	International Communications
Ec 307	International Economics
Ec 308	Comparative Economic Systems
Ec 371	Economic Development
Ec 372	International Political Economy
Fr/Ge/Sp 311	Making of Modern Society
Fr/Ge/Sp 312A & 312B	Languages for the Professions
Hi 205	Modern Far East
Hi 216	English History since 1603 (Modern Britain)
Hi 218	Europe in the Twentieth Century
Hi 220	History of Soviet Union
Hi 223	History of China
Hi 224	History of Japan
Hi 327	History of Africa
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
PS 301	Comparative Governments
PS 305	American Foreign Policy
PS 327	Latin American Politics
PS 342	Politics of Developing Nations
PS 413	United States Security Policy
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The director of International Studies (Professor Wayne Selcher) will help the student with course selections. Courses taken for this minor may be counted to fulfill the college graduation requirement in international education and for either Core or major requirements (but not both). Completion of the minor is indicated on a student's transcript.



Directory

The Faculty

Gerhard E. Siegler, *President, Professor of Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Emeriti

Edgar T. Biting, *Edgar T. Biting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; L.L.D., Elizabethtown College (1952-1984)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1949-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Universite, University of Paris (1966-1973)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Reba M. Sebelist, *Assistant Professor of Occupational Therapy Emerita*
B.S., Elizabethtown College; M.S.Ed., University of Pennsylvania, OTR/L, FAOTA (1977-1987)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Robert S. Young, *Director of Special Gifts Emeritus*
(1950-1984)

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968); Sabbatical Leave, Fall Semester, 1988.

I. L. Bossler, *Professor of Mathematics* (1968)
B.S., Ursinus College; M.S., Purdue University (1959)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)

James L. Dively, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)

J. Thomas Dwyer, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)

Delbert W. Ellsworth, *Professor of Psychology* (1988)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)

Charles Fazzi, *Edgar T. Biting Professor of Accounting* (1988)
B.S., M.B.A., Ph.D., The Pennsylvania State University (1988)

John F. Harrison, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)

J. Robert Heckman, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)

Jack L. Hedrick, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963)

Frederic E. Hoffman, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)

John A. Hostetler, *Distinguished Scholar-in-Residence and Director of the Center for the Study of Anabaptist and Pietist Groups* (1986)
B.A., Goshen College; M.A., Ph.D., Penn State University (1986)

A. F. Kish, *Professor of Business, Program Director, Continuing Education* (1968)
B.S., Rutgers University; M.S., University of Delaware (1963) *Retired December, 1988.*

Otis D. Kitchen, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)

Donald E. Koontz, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)

Donald B. Kraybill, *Professor of Sociology* (1984)
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)

J. Kenneth Kreider, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964)

Henry M. Libhart, *Professor of Art* (1972)
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967)

Richard L. Mumford, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Rollin E. Pepper, *Professor of Biology* (1968)
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964)

Zoe G. Proctor, *Professor of Chemistry* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)

William V. Puffenberger, *Professor of Religion* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967)

John P. Ranck, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)

D. Paul Rice, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)

Jobie E. Riley, *Professor of Communications* (1980)
B.A., Manchester College; M.Div., Bethany Theological Seminary; Ph.D., Temple University (1961)

Wayne A. Selcher, *College Professor of International Studies, and Director of International Studies* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969)

Ronald L. Shubert, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)

Martin O. L. Spangler, *Professor of Chemistry* (1968)
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966)

Stanley T. Sutphin, *Professor of Philosophy* (1970)
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963)

Bela Vassady, Jr., *Horace E. Raffensperger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)

Thomas R. Winpenny, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)

Associate Professors

Stanley K. Bowers, *Associate Professor of Education* (1973)
B.S., Millersville State College; M.Ed., Temple University (1965)

Carl A. Callenbach, *Associate Professor of Education* (1972)
B.S., Pennsylvania State University; M.A., Appalachian State University; Ed.D., Pennsylvania State University (1972)

Uldis Daiga, *Associate Professor of Modern Languages* (1973)
B.S., University of North Carolina; M.A., Temple University (1965)

Paul M. Dennis, *Associate Professor of Psychology* (1973)
B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)

Robert D. Dolan, *Associate Professor of Mathematics, Clinical Professor in Mathematics Education* (1970)
B.S., California State College; M.A., West Virginia University (1964)

Darrell R. Douglas, *Associate Professor of Music* (1972)
B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972)

Leonard A. Eiserer, *Associate Professor of Psychology* (1986)
B.A., University of Maine; M.A., Ph.D., Bryn Mawr College (1981)

Martha A. Eppley, *Associate Professor of Economics* (1971); *Associate Dean of the Faculty and Registrar* (1979)
B.S., Elizabethtown College; M.B.A., Indiana University (1964)

Hugh G. Evans, Jr., *Associate Professor of Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania State University (1968)

Boyd Fox, *Associate Professor of Education* (1973)
B.S., M.S., Ed.D., Utah State University (1970)

E. Margaret Gabel, *Assistant to the Director of the Library and Head Cataloguer*
M.S. L.S., Syracuse University

George A. Gliptis, *Associate Professor of Business* (1972)
B.S., J.D., University of Virginia (1970)

Suzanne Schmidt Goodling, *Associate Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury College (1964)

Maurice R. Hoppie, *Associate Professor of Economics* (1987)
B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)

Jacqueline L. Jones, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana-Champaign, OTR/L (1987)

John E. Koontz, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)

Carroll L. Kreider, *Associate Professor of Business and Clinical Professor in Business Education* (1978)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)

Ronald L. Laughlin, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)

Thomas R. Leap, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)

R. Bruce Lehr, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)

J. Henry Long, *Associate Professor of Sociology* (1978), and *Coordinator of Academic Computing* (1986)
B.S., Elizabethtown College; M.A., Temple University; B.D., D.D., Bethany Theological Seminary (1969)

W. Wesley McDonald, *Associate Professor of Political Science* (1986)
B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)

Robert C. Moore, *Associate Professor of Communications* (1983)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983)

Robert K. Morse, *Associate Professor of Mathematics* (1971)
B.S., Franklin and Marshall College; M.A., Temple University (1968)

Stanley R. Neyer, *Associate Professor of Business* (1972)
B.S., Elizabethtown College; M.B.A., Shippensburg State College; (1964)

D. Kenneth Ober, *Associate Professor of Physical Education, and Director of Athletics* (1972)
B.S., M.S., West Chester State College (1964)

Lynn S. Orlando, *Associate Professor of Education* (1988)
B.A., Point Park College; M.Ed., Bloomsburg State University; D. Ed., The Pennsylvania State University (1988)

Paul Petersen, *Associate Professor of Occupational Therapy* (1988)
B.S., Syracuse University; M.A., New York University; Ph.D., University of Nebraska at Lincoln, OTR/L (1984)

Frank P. Polanowski, *Associate Professor of Biology* (1981)
B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)

H. Marshall Pomroy, *Associate Professor of Business* (1971)
B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)

H. Herbert Poole, Jr., *Associate Professor of History* (1982)
B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969)

Raymond R. Reeder, *Associate Professor of Chemistry* (1973)
B.S., Case Institute of Technology; Ph.D., Brown University (1969)

John Rohrkemper, *Associate Professor of English* (1987)
B.A., M.A., Ph.D., Michigan State University (1981)

Carmine T. Sarracino, *Associate Professor of English* (1984)
B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973)

Charles D. Schaeffer, Jr., *A.C. Baugher Associate Professor of Chemistry* (1981)
B.A., Franklin and Marshall College; Ph.D., State University of New York at Albany (1976)

Harry L. Simmers, *Associate Professor of Music* (1971)
B.S., Bridgewater College; M.M., American Conservatory of Music (1966)

Donald E. Smith, *Associate Professor of Communications* (1973)
B.S., M.S., State University of New York College at Geneseo (1969)

John W. Stites, *Associate Professor of Music* (1976)
B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, *Associate Professor of Business* (1987)
B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut; Ph.D., Temple University (1987)

Glenn H. Thompson, Jr., *Associate Professor of Earth Science* (1973)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)

Randolph L. Trostle, *Associate Professor of Business* (1984)
B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)

Assistant Professors

Kurt M. Barnada, *Assistant Professor of Modern Languages* (1988)
B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University. (1988)

Cecelia Benelli, *Assistant Professor of Education* (1985)
B.S., M.Ed., Ph.D., Pennsylvania State University (1985)

Vivian R. Bergel, *Assistant Professor of Social Work and Director of The Social Work Program* (1987)
B.A., M.S.W., West Virginia University (1987)

Cynthia Beyerlein, *Assistant Professor of Business and Director of the Small Business Center* (1985)
B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)

Jamie M. Byrne, *Assistant Professor of Communications* (1988)
B.S., M.S., Murray State University (1988)

Christina A. Bucher, *Assistant Professor of Religion* (1988)
A.B., Elizabethtown College; M.A.Th., Bethany Theological Seminary, Ph.D., Claremont Graduate School (1988)

J. Sue Dolan, *Assistant Professor of Business* (1980)
B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

John B. Gaffney, *Assistant Professor of Physics* (1988)
B.A., Columbia University; M.A., Columbia University; Ph.D., Columbia University (1988)

Patricia A. Hill, *Assistant Professor of Business* (1988)
B.A., Gettysburg College; M.B.A., University of Baltimore (1988)

Beulah S. Hostetler, *Visiting Assistant Professor of Sociology and Anthropology* (1986)
A.A., Hesston College; B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1986)

Carole A. Huber, *Assistant Professor of English* (1983)
B.A., M.A., Southeast Missouri State University; Ph.D., Texas Christian University (1983)

Timothy J. Hudson, *Assistant Professor of Communications* (1985)
B.A., M.A., Eastern New Mexico University (1985)

Yvonne E. Kauffman, *Assistant Professor of Physical Education* (1972)
B.S., Bridgewater College; M.Ed., West Chester State College (1966)

Beverly Kelly, *Assistant Professor of Occupational Therapy* (1988)
B.S., State University of New York; M.A., New York University, OTR/L (1988)

Edmond L. Kiser, *Assistant Professor of Theatre* (1987)
B.S., University of Science and Arts of Oklahoma; B.A., M.A., University of Akron; Ph.D., Wayne State University (1987)

Louis F. Martin, *Assistant Professor of English* (1988)
B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)

Anthony M. Matteo, *Assistant Professor of Philosophy* (1986)
B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

E. Fletcher McClellan, *Assistant Professor of Political Science* (1982)
B.A., Franklin and Marshall College; M.A., East Tennessee State University (1982)

James J. Moyer, *Assistant Professor of Business* (1986)
B.S., Dickinson College; M.Letters, University of Pittsburgh (1986)

Donald G. Muston, *Assistant Professor of Business* (1977)
B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Kerry C. Painter, *Assistant Professor of Computer Science* (1986)
B.A., University of Hawaii; M.S., Drexel University (1986)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)
B.A., Gettysburg College; M.S., Vanderbilt University; Ph.D., Vanderbilt University (1988)

Jenny H. Shinn, *Assistant Professor of Music* (1986)
B.A., Ewha University; M.A., Columbia University; M.Ed., Columbia University; Ed.D., Columbia University (1986)

William M. Stuckey, *Assistant Professor of Physics* (1988)
B.S., Wright State University; M.S., University of Cincinnati; Ph.D., University of Cincinnati (1988)

John A. Teske, *Assistant Professor of Psychology* (1986)
B.A., Indiana University; M.A., Ph.D., Clark University (1986)

Sharon R. Trachte, *Assistant Professor of Modern Languages* (1986)
B.A., Muskingum College; M.A.,
University of Kentucky; Ph.D., State
University of New York at Binghamton
(1986)

Barbara C. Tulley, *Assistant Professor of Computer Science* (1981)
B.S., St. Bonaventure University; M.S.,
Worcester Polytechnic Institute (1974)

Hans-Erik Wennberg, *Assistant Professor of Communications and Director of Instructional Services* (1984)
B.S., State University College at Geneseo;
M.Ed., Temple University; Ph.D.,
University of Connecticut (1984)

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)
B.A., Bridgewater College (1968)

Instructors

Daniel S. Chiang, *Instructor in Computer Science* (1987)
B.S., Tamsui Oxford College; M.Acc.,
East Tennessee State University; M.S.,
Alabama A&M University (1987)

Sharon K. Farley, *Instructor in Occupational Therapy* (1987)
B.S., Elizabethtown College, OTR/L
(1987)

Milton Friedly, *Instructor in Art* (1987)
A.A., Northwest Community College;
B.F.A., Arizona State University;
M.F.A., University of Wyoming (1987)

Adjunct Faculty

On Campus

Sherry Albert, *Department of Occupational Therapy*
Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Joseph Anderson, *Department of Occupational Therapy*
B.S., M.Ed., M.B.A., Pennsylvania State University

Linda Bartholomew, *Department of Occupational Therapy*
B.S., Elizabethtown College

Virginia B. Bates, *Instructor in English as a Second Language*
B.A., Southern Illinois University; M.A.,
University of California at Los Angeles

Lynn E. Benkendorf, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Susan G. Bousliman, *Department of Communications*
B.A., Ohio State University; M.S.,
University of Wisconsin-La Crosse

Janet Clark, *Department of Fine and Performing Arts*
B.A. Elizabethtown College

Ann S. Dinsmore, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Marcia L. Englar, *Department of Fine and Performing Arts*
B.M., B.M.E., Augustana College;
M.M., Peabody Conservatory of The
Johns Hopkins University

David Ferruzza, *Department of Physics and Pre-Engineering, and Director of Pre-Engineering Program*
B.S., Newark College of Engineering;
M.S., Massachusetts Institute of
Technology

Darrel Frey, *Department of Physics and Pre-Engineering*
B.S.M.E., Drexel University

Elizabeth M. Gardner, *Department of English*
B.A., Bates College; M.L.A., The Johns
Hopkins University

Laszlo Geder, *Department of Occupational Therapy*
M.D., Ph.D., University of Debrecen,
Hungary

Doris J. Hall, *Department of Fine and Performing Arts*
B.M., Peabody Conservatory of The
Johns Hopkins University; M.M., University of Michigan

Cynthia Hess, *Department of English*
B.S., Millersville State College; M.A.,
Millersville University

Elizabeth J. Kauffman, *Department of Fine and Performing Arts*
B.A., Wheaton College; M.A., Columbia
University

David E. Leithmann, *Department of Fine and Performing Arts*
B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania

Kay Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania;
M.M., Pennsylvania State University

Linda M. Metz, *Department of Fine and Performing Arts*
B.M.E., East Carolina University;
M.M.P., Kent State University

Candace H. O'Donnell, *Department of English*
B.A., Washington University; M.A.,
Millersville State College

Gretchen N. Patti, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Joellen P. Placeway, *Department of Fine and Performing Arts*
B.M., Houghton College; M.M.,
Michigan State University

Debra D. Ronning-Seyler, *Department of Fine and Performing Arts*
B.S., M.A., Indiana University of
Pennsylvania

Alison J. Roth, *Department of Fine and Performing Arts*
B.M., Oberlin Conservatory; M.M.,
New England Conservatory of Music

Janet Rowand, *Department of Occupational Therapy*
B.S., Elizabethtown College

Nancy J. Shaw, *Department of Mathematical Science*
B.A., Miami University of Ohio

Laurie A. Showers, *Department of Mathematical Science*
B.S., Elizabethtown College

William M. Sloane, *Department of Communications*
B.A., York College of Pennsylvania; J.D.,
Delaware Law School of Widener
University; LL.M., Temple University;
S.J.D., Thomas Jefferson College of
Law of Heed University

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Carol S. Weavill, *Department of Computer Science*
B.S., Elizabethtown College

Judy Williams-Henry, *Department of Fine and Performing Arts*
B.F.A., Boston Conservatory of Music;
M.S. Wheelock College

Off Campus Medical Technology

Margaret Black, *Polyclinic Medical Center, Harrisburg, Pa.*
B.S., Lebanon Valley College; M.T.
(ASCP)

Sharon Deitrich, *Reading Hospital and Medical Center, West Reading, Pa.*
B.S., Kutztown University

John W. Eiman, *Abington Memorial Hospital, Abington, Pa.*
M.D., University of Pennsylvania School
of Medicine

Edward Eisenhower, *St. Joseph Hospital, Lancaster, Pa.*
M.D., Medical University of South
Carolina

Gerald Fahs, *Lancaster General Hospital, Lancaster, Pa.*
M.D., Temple University School of
Medicine

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Janice Fogleman, *Harrisburg Hospital, Harrisburg, Pa.*
M.Ed., Pennsylvania State University;
M.T. (ASCP)

Nadine Gladfelter, *Lancaster General Hospital, Lancaster, Pa.*
M.S., Temple University; M.T. (ASCP)

Susan Herr, *St. Joseph Hospital, Lancaster, Pa.*
M.S., Temple University; M.T. (ASCP)

Brenda Kile, *York Hospital, York, Pa.*
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, *Harrisburg Hospital, Harrisburg, Pa.*
M.D., Airlangga University School of Medicine

John A. Mihok, *Monmouth Medical Center, Long Branch, N.J.*
B.S., University of Maryland; M.T. (ASCP), Catholic University of America; S.M. (ASCP)

Julian W. Potok, *Polyclinic Medical Center, Harrisburg, Pa.*
D.O., Philadelphia College of Osteopathic Medicine

Lynn Russell, *Polyclinic Medical Center, Harrisburg, Pa.*
B.S. Springfield College; B.S. Towson State College; M.A., Central Michigan University; M.T. (ASCP)

Barbara Scheelje, *Abington Memorial Hospital, Abington, Pa.*
B.S., Colby-Sawyer College; M.T. (ASCP)

I. Donald Stuard, *Reading Hospital and Medical Center, West Reading, Pa.*
M.D., University of Rochester School of Medicine

John P. Whiteley, *York Hospital, York, Pa.*
M.D., Temple University School of Medicine

Louis Zinterhofer, *Monmouth Medical Center, Long Branch, N.J.*
M.D., Tulane Medical School

Social Work

Margie Adelman, *First Step, Harrisburg, Pa.*
M.S.W., University of Pittsburgh

Molly Casey-Mock, *Hershey Medical Center, Hershey, Pa.*
M.S.W., Maryland College

Janet Dick, *Urban League of Lancaster County, Lancaster, Pa.*
M.S.W., Virginia Commonwealth University

Bruce Campbell, *Lancaster County Prison, Lancaster, Pa.*
B.A., Elizabethtown College

James Eash, *Treatment Alternatives to Street Crime, Harrisburg, Pa.*
M.S.W., Temple University

James Fuddy, *Elizabethtown Hospital and Rehabilitation Center, Elizabethtown, Pa.*
M.S.W., University of Pennsylvania

William Heffner, *Social Work Service, VA Hospital, Lebanon, Pa.*
M.S.W., University of Pittsburgh

Kevin Jacoby, *Elizabethtown Hospital and Rehabilitation Center, Elizabethtown, Pa.*
M.S.W., University of Maryland

William Kantor, *Social Work Service, VA Hospital, Lebanon, Pa.*
M.S.W., Case Western Reserve University

Rebecca Kennedy, *Holy Spirit Hospital, Camp Hill, Pa.*
M.S.W., Virginia Commonwealth University

Janice Lehr, *Pennsylvania Chapter, National Association of Social Workers, Harrisburg, Pa.*
M.S.W., West Virginia University

Pamela McDermott, *Hershey Medical Center, Hershey, Pa.*
M.S.W., University of Michigan

Jill McVey, *Lancaster County Children and Youth Social Services, Lancaster, Pa.*
M.S.W., Temple University

Joseph Miller, *Social Work Service, VA Hospital, Lebanon, Pa.*
M.S.W., Marywood College

Stanley Mitchell, *House Judiciary Committee, Harrisburg, Pa.*
M.S.W., Washington University; J.D., Temple University

Fiona Patterson, *Polyclinic Medical Center, Harrisburg, Pa.*
M.S.W., University of Pennsylvania

Hubert Peterson, *Social Service Department, Harrisburg Hospital, Harrisburg, Pa.*
M.S.W., University of Illinois

Gary Shuey, *Cumberland County Children's Services, Carlisle, Pa.*
M.S.W., Marywood College

Joan Soop, *Keystone Residence, Inc., Harrisburg, Pa.*
M.E., Shippensburg State College

Claudia Stephens, *Masonic Homes, Elizabethtown, Pa.*
B.A., Elizabethtown College

Martin Yespe, *Crisis Intervention, Harrisburg, Pa.*
M.S.W., University of Maryland

Psychology

Ralph Norgran, *Department of Psychology, Hershey Medical Center, Pennsylvania State University, Hershey, Pa.*
A.B., University of Pennsylvania, A.M., University of Michigan, Ph.D. University of Michigan

Clinical Education Centers: Occupational Therapy

Abington Memorial Hospital
Abington, Pa.

Adult Day Care
Hellam, Pa.

Allegheny General Hospital
Pittsburgh, Pa.

All Saints Hospital
Wyndmoor, Pa.

Allentown State Hospital
Allentown, Pa.

Allied Services for the Handicapped
Scranton, Pa.

Betty Bacharach Rehabilitation Center
Pomona, N.J.

Baltimore City Hospital
Baltimore, Md.

Bergen Pines County Hospital
Paramus, N.J.

Binghamton Psychiatric Center
Binghamton, N.Y.

Bryn Mawr Rehabilitation Hospital
Malvern, Pa.

Carlisle Hospital
Carlisle, Pa.

Chambersburg Hospital
Chambersburg, Pa.

Chestnut Hill Rehabilitation Hospital
Wyndmoor, Pa.

Coatesville VA Medical Center
Coatesville, Pa.

Colonial Manor
York, Pa.

Community Hospital of Lancaster
Lancaster, Pa.

Community Rehabilitation Specialists
Erie, Pa.

Danbury Hospital
Danbury, CT

Deer's Head Hospital Center
Salisbury, MD

D. T. Watson Rehabilitation Hospital
Sewickley, Pa.

Eagleville Hospital and Rehabilitation Center
Eagleville, Pa.

Eastern Pennsylvania Psychiatric Institute
Philadelphia, Pa.

Easton Hospital
Easton, Pa.

Elizabethtown Hospital and Rehabilitation
Center of the Pennsylvania State
University
Elizabethtown, Pa.

Ephrata Community Hospital
Ephrata, Pa.

Eugenia Hospital
Lafayette Hills, Pa.

Fallston General Hospital
Fallston, Md.

Fort Howard VA Medical Center
Fort Howard, Md.

Francis Scott Key Medical Center
Baltimore, Md.

Garden State Rehabilitation Center
Toms River, N.J.

Geisinger-Wyoming Valley Medical Center
Wilkes-Barre, Pa.

Georgetown University Hospital
Washington, D.C.

Good Samaritan Hospital
Baltimore, Md.

Good Samaritan Hospital
Lebanon, Pa.

Good Shepherd Home & Rehabilitation
Hospital
Allentown, Pa.

Great Lakes Rehabilitation Hospital
Erie, Pa.

Harrisburg Institute of Psychiatry
Harrisburg, Pa.

Harrisburg Hospital Community Mental
Health Center
Harrisburg, Pa.

Harrisburg Polyclinic Medical Center
Harrisburg, Pa.

Harrisburg State Hospital
Harrisburg, Pa.

Harmarville Rehabilitation Center
Pittsburgh, Pa.

Haverford State Hospital
Haverford, Pa.

Heatherbank Rehabilitation Center
Columbia, Pa.

Hershey Medical Center
Hershey, Pa.

Highland Health Facility
Baltimore, Md.

Hillside Hospital
Glen Oaks, N.Y.

Holy Spirit Hospital & Mental Health
Center
Camp Hill, Pa.

Homestead Nursing and Rehabilitation
Center
Willow Grove, Pa.

Hospital of the University of Pennsylvania
Philadelphia, Pa.

Institute of Pennsylvania Hospital
Philadelphia, Pa.

Institute of Living
Hartford, Conn.

Jefferson Hospital
Pittsburgh, Pa.

John Heinz Institute
Wilkes-Barre, Pa.

Johns Hopkins Hospital of Baltimore
Baltimore, Md.

Kessler Institute for Rehabilitation
West Orange, N.J.

Lancaster General Hospital
Lancaster, Pa.

Leading Nursing and Rehabilitation Center
Harrisburg, Pa.

Lebanon VA Medical Center
Lebanon, Pa.

Louden Memorial Hospital
Leesburg, Va.

Magee Rehabilitation Hospital
Philadelphia, Pa.

Marlboro State Hospital
Marlboro, N.J.

Maryland General Hospital
Baltimore, Md.

Maryland Rehabilitation Hospital
Baltimore, Md.

Medical Center of Delaware
Wilmington, Del.

Mercy Hospital
Pittsburgh, Pa.

Montebello Hospital
Baltimore, Md.

Montgomery General Hospital
Olney, Pa.

Muhlenberg Medical Center
Plainfield, N.J.

Norristown State Hospital
Norristown, Pa.

North Virginia Mental Health Institute
Falls Church, Va.

New York University—
Cornell Medical Center
White Plains, N.Y.

Options
Lancaster, Pa.

Our Lady of Lourdes Hospital
Camden, N.J.

Philadelphia Psychiatric Center
Philadelphia, Pa.

Philadelphia VA Medical Center
Philadelphia, Pa.

Philhaven Hospital
Lebanon, Pa.

Pottstown Memorial Hospital
Pottstown, Pa.

Presbyterian University Hospital
Pittsburgh, Pa.

Reading Hospital & Medical Center
West Reading, Pa.

Reading Hospital Day Treatment Center
West Reading, Pa.

Reading Rehabilitation Hospital
Reading, Pa.

Rehabilitation Hospital for Special Services
Mechanicsburg, Pa.

Rehabilitation Hospital for Special Services
York, Pa.

Rehabilitation Hospital for Special Services
of Nittany Valley
Bellefonte, Pa.

Rehabilitation Hospital of Altoona
Altoona, Pa.

Robert Wood Johnson Institute
Edison, NJ

Rockland Psychiatric Center
Orangeburg, N.Y.

Rolling Hills Hospital
Elkins Park, Pa.

Sacred Heart Hospital
Norristown, Pa.

Saint Francis General Hospital
Pittsburgh, Pa.

Saint John's Hospital
Pittsburgh, Pa.

Saint Joseph Hospital
Lancaster, Pa.

Saint Joseph Hospital
Reading, Pa.

Saint Lawrence Rehabilitation Center
Lawrenceville, N.J.

Saint Joseph's Medical Center
Yonkers, NY

Saint Luke's Hospital
Bethlehem, Pa.

Saint Margaret Memorial Hospital
Pittsburgh, Pa.

Saint Vincent's Hospital and Medical Center
New York, N.Y.

San Francisco General Hospital
San Francisco, CA

Sinai Hospital
Baltimore, Md.

Springfield Hospital Center
Sykesville, Md.

Taylor Hospital
Ridley Park, Pa.

Temple University Hospital
Philadelphia, Pa.

The Sheppard and Enoch Pratt Hospital
Baltimore, Md.

Thomas B. Finan Center
Cumberland, Md.

Thomas Jefferson University Hospital
Philadelphia, Pa.

Trenton Psychiatric Hospital
West Trenton, N.J.

Truckee Meadow's Hospital
Reno, Nev.

University of Virginia Medical Center
Charlottesville, Va.

V.A. Medical Center
West Haven, Conn.

Warren State Hospital
Warren, Pa.

Wernersville State Hospital
Wernersville, Pa.

Williamsport Hospital
Williamsport, Pa.

The Administration

Office of the President

Gerhard E. Spiegler

President
Ph.D., University of Chicago

Robert L. Odean

*Executive Assistant to the President and
Secretary of the College*
M.Div., Northern Baptist Theological
Seminary

Patricia J. Austin

Chaplain
Ed.D., Temple University

Bruce G. Holran

Director of College Relations
A.B., Colgate University

Arthur G. George III

*Assistant Director of Public
Information*
B.A., Elizabethtown College

Martha A. Farver-Apgar

Director of Personnel

Academic Affairs

Frederick F. Ritsch

Provost and Dean of the Faculty
Ph.D., University of Virginia

Martha A. Eppley

*Associate Dean of the College and
Registrar*
M.B.A., Indiana University

Shirley A. Deichert

Director of the Learning Center
M.S., Temple University

Gloria F. Hess

Associate Registrar
M.A.R., Lancaster Theological
Seminary

Nelson P. Bard, Jr.

Director of the Library
Ph.D., University of Virginia

E. Margaret Gabel

*Assistant to the Director of the
Library and Head Cataloguer*
M.S. L.S., Syracuse University

Sylvia M. Tiffany

Reader's Services Librarian
M.S. L.S., North Carolina Central
University

Julie A. Ditzler

Reference Librarian (Part-Time)
M.S., Drexel University

Naomi L. Hershey

Reference Librarian (Part-Time)
B.S., Elizabethtown College; M.L.S.,
Drexel University

Gordon McK. Bateman

Director of Financial Aid
M.S., Indiana University

Mary Frances Woodall

Assistant Director of Financial Aid
M.Ed., University of Pittsburgh

David B. Conway

Director of Admissions
M.A., Temple University

Donald K. Marsh, Associate Director of

*Admissions and Varsity Basketball
Coach*
B.A., Franklin and Marshall College

Mark A. Stanley, Assistant Director of

Admissions
B.A., York College of Pennsylvania

**Susan E. Cupit, B.A., Elizabethtown
College**

Sally Hillman Redman,

B.A., University of Delaware

Steven P. Swope,

B.A., Elizabethtown College
Admissions Counselors

Gloria Bittner Hay

Director of Continuing Education
Ph.D., University of Wisconsin

A. F. Kish

*Director of the Adult External Degree
Program*
M.S., University of Delaware
Retired December, 1988

John J. Marisic

*Director of Administrative Systems and
Operations*
B.A., The Johns Hopkins University

Nevin O. Garner

*Associate Director of Data Processing
Services*

Business Affairs

John M. Shaeffer

Treasurer
M.B.A., University of Pittsburgh

Martha A. Farver-Apgar

Office Manager

Harry M. Page

*Superintendent of Buildings and
Grounds*
B.A., Maryville College

David R. Salmon

Director of Food Services
A.A.S., SUNY

Stephen R. Storck

Business Manager
B.A., King's College; C.P.A.

Mary W. Hill

Post Office Manager
B.A., Elizabethtown College

J. Robert Hollinger

Chief Accountant
B.S., Elizabethtown College

Keith M. Marks

Bookstore Manager

Mary F. Meehan

Director of Summer Conferences
B.A., Millersville University

William E. Whitman

Director of Public Safety
B.S., West Chester State College

Student Affairs

Walter B. Shaw

Dean of the College
Ph.D., Michigan State University

James R. Hilton, Sr.

*Associate Dean of the College for
Student Services*
M.S., Shippensburg State College

Patricia J. Austin

Chaplain and Counselor
Ed.D., Temple University

Ginger S. Groff

*Administrative Assistant to Associate
Dean of the College for Student
Services/Director of Health Services*
R.N., Harrisburg Polytechnic Clinic
Hospital

Beverly V. Piscitelli

*Counselor and Coordinator of Advis-
ing Services*
M.S., University of Bridgeport;
N.C.C.

Royal E. Snavelly

Counselor
M.A., Ohio State University

Dennis M. Murphy

*Assistant Dean of the College for
Residence Life*
Ph.D., Indiana University

Susan L. Boyd

Director of Housing
M.S., University of Hartford

Robin A. Stokes

*Career Counselor/Residence
Director*
M.Ed., Pennsylvania State
University

- H. Andrew Sagar III**
Assistant Dean of the College for
Student Life
Ph.D., University of Pittsburgh
- D. Kenneth Ober**
Director of Athletics
M.S., West Chester State College
- Donald K. Marsh**
Varsity Basketball Coach and
Associate Director of Admissions
B.A., Franklin and Marshall College
- Pamela A. Mehrens**
Head Volleyball Coach and Staff
Member in the Department of
Physical Education
M.S., North Dakota State University
- Arthur D. Roderick, III**
Head Soccer Coach and Staff
Member in the Department of
Physical Education
B.S., Elizabethtown College

Institutional Advancement

- Mary Beth Leymaster Matteo**
Vice President for Institutional
Advancement
B.A., Temple University
- Julie A. Myers**
Associate Director of Development/
Foundations and Corporate Programs
B.S., Towson University
- Ellen M. Simpson**
Assistant Director of Development
B.A., Ohio Wesleyan University
- Patrick J. Hall**
Associate Director of Development/
Foundation and Corporate Programs
M.A., Fordham University
- J. Mark Bushong**
Director of Planned Giving and Church
Relations
- Joseph S. Burman**
Researcher/Writer
M.A., Temple University
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M.S., Temple University

Administrative Staff

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Faculty
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Secretary to the President
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Systems Manager/Analyst Programmer
B.S., Elizabethtown College
- Barbara Strong Ellis**
Library Assistant
B.A., Ouachita Baptist University
- Nevin O. Garner**
Associate Director of Data Processing
Services
- Tamera L. Garrison**
Operations Manager, Department of Food
Services
- Alice L. Knouse**
Paraprofessional in Business
B.S., Elizabethtown College
- Doris J. McBeth**
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Institutional Advancement
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Assistant to the Director of Housing
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Manager, Jay's Nest
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Secretary to the Treasurer
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Information Center Programmer
B.S., Taylor University
- Adele D. Poholsky**
Secretary to Executive Assistant to the
President and Secretary of the College
A.A., Mt. Vernon Junior College
- Mary K. G. Puffenberger**
Administrative Staff Position in Readers'
Services
B.A., Bridgewater College
- Randel J. Rossi**
Assistant Director of Food Services
- Steven M. Rutter**
Electronics Engineer
A.S., Electronics Institute
- Deborah G. Sagar**
Secretary, Center for Continuing
Education
B.A., The American University
- Rebecca J. Serfass-Wagner**
Biology Laboratory Assistant
M.S., SUNY Buffalo
- Patricia G. Stepanchak,**
Staff Nurse
B.S. University of Pittsburgh; R.N.
- Carol H. Warfel**
Library Assistant
M.A., Indiana University of Pennsylvania
- Janet I. Waser**
Computer Operator
- Mary Ann Weidman**
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A.A., Buffalo State University
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Food Service Manager
B.S., Pennsylvania State University

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C.R.L., Inc.
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I.S.C., Lancaster, Pa.
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Millersville University
- Glenn Y. Forney '54**, (1989)
Shavertown, Pennsylvania
President and Chief Executive Officer,
United Penn Bank
- Robert A. Hess '50**, (1989)
Elizabethtown, Pennsylvania
Professor of History and African Studies,
Messiah College
- Robert O. Hess '40**, (1988)
Manheim, Pennsylvania
Owner, Robert O. Hess Agency
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Lancaster, Pennsylvania
President, High Industries, Inc.
- Clifford B. Huffman '47**, (1990)
Lancaster, Pennsylvania
Mortgage Consultant, The Equitable Life
Assurance Society of the United States;
Accredited Rural Appraiser; Real Estate
Broker
- Ogden C. Johnson** (1990)
Palmyra, Pennsylvania
Senior Vice President (retired), Hershey
Foods Corporation
- June M. Keeney** (1989)
York, Pennsylvania
Reading Supervisor (retired), Dover Area
School District
- Dorothy L. Lyet** (1988)
Bronxville, New York and Lancaster,
Pennsylvania
Community and Civic Leader

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Glen Rock, New Jersey
Vice President, Metropolitan Life Insurance Company

Benjamin G. Musser '43, (1989)
Wormleysburg, Pennsylvania
Physician and Surgeon

Robert F. Nation '49, (1988)
Elizabethtown, Pennsylvania
President, Penn Harris Company

Wayne A. Nicarry (1988)
Greencastle, Pennsylvania
President (retired) and Consultant, Grove Manufacturing Company

Daniel H. Raffensperger (1988)
Elizabethtown, Pennsylvania
President, The Continental Press, Inc.

James C. Robertson (1990)
Wormleysburg, Pennsylvania
President-Chairman of the Board, Consumers Financial Corporation and Consumers Life Insurance Co.

Larry Sauder '64 (1990)
Manheim Pennsylvania
President and General Manager, Sauder Chevrolet Company

R. Wesley Shope (1988)
Lampeter, Pennsylvania
President, Educators Mutual Life Insurance Company

Judith K. Wallin '60 (1990)
New York, New York
Associate Professor of Clinical Pediatrics, New York University School of Medicine

E. Mark Weaver '43 (1988)
Strasburg, Pennsylvania
Dentist

Harold E. Yeager (1989)
St. Thomas, Pennsylvania
Principal, St. Thomas and Mt. View Elementary Schools

Galen S. Young '34 (1989)
Wallingford, Pennsylvania
Professor Emeritus of Surgery, Philadelphia College of Osteopathic Medicine.

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Wooster, Ohio
Dean of the Faculty, The College of Wooster

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Princeton, New Jersey
Vice President, Treasurer and Chief Financial Officer, Keystone Automobile Club

Helen W. Ebersoie '69 (1990)
Lancaster, Pennsylvania
Coordinator, Associates in Downtown Lancaster, Lancaster Chamber of Commerce and Industry, Inc.

Polly C. Ehrgood (1990)
Lebanon, Pennsylvania
Homemaker, Civic Leader

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Reading, Pennsylvania
Partner (CPA), Herbein & Sweren Company, Inc.

Albert A. Koch '64 (1989)
Bloomfield Hills, Michigan
Equity Partners of America

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Lancaster, Pennsylvania
Consultant and Senior Partner (retired), Kuntz Lesher Siegrist & Martini

Wilbur K. Shoemaker '49 (1990)
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Ephrata, Pennsylvania
President and Chief Executive Officer, Denver & Ephrata Telephone and Telegraph Company

Jane Idell Wenger '65 (1990)
Lancaster, Pennsylvania
Lancaster Arthritis Center

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Palmyra, Pennsylvania
Consultant in Special Education, Department of Public Instruction, Commonwealth of Pennsylvania (retired)

Samuel S. Wenger '27
Paradise, Pennsylvania
Attorney (retired)

Note: Year indicates expiration of term.

Index

Academic dishonesty, 14
 Academic dismissal, 11, 14
 Academic due process, 13
 Academic good standing, 11
 Academic honors, 11
 Academic integrity, 14
 Academic judicial system, 13
 Academic load, 6
 Academic majors, 3
 Academic minors, 3
 Academic probation, 11
 Academic program:
 Core requirements, 4
 degrees offered, 3
 individual program adjustments, 6
 majors, 3
 Academic Standing, 11
 Accounting, 19; see Department of Business, 18
 Adding courses, 9
 Administration, 63
 Advanced placement, 12
 Allied Health, 53
 Anthropology, 52; see Department of Sociology/Anthropology/Social Work, 49
 Appeal of a grade, 10
 Applied music and ensembles, 35
 Art, 32
 Attendance in class, 6
 Auditing courses, 7
 Biology, Department of, 16, 53
 Board of Trustees, 64
 Brethren Colleges Abroad Program, 5
 Business, Department of, 18
 Business Administration, 20; see Department of Business, 18
 Business Education, 19, 21; see Department of Business, 18
 Calendar 1988-89, Cover II (1989-90, Cover III)
 Calculation of grade point average, 11
 Challenge testing, 12
 Change of major, 6
 Change of minor, 6
 Change of registration, 9
 Cheating, 14
 Checksheets, 6
 Chemistry, Department of, 22
 Class standing, 10
 CLEP Examinations, 12
 College Scholars, 11
 Communications, Department of, 24
 Computer Science, Department of, 26
 Continuing education, 15
 Core, General Education, 3
 Course load, 7
 Course withdrawal, 9
 Credits, 9; by examination, 12; class standing, 10; graduation, 8; transfer, 13
 Dance, 32; see Department of Fine and Performing Arts, 32
 Dean's List, 11
 Declaration of major, 6
 Declaration of minor, 6
 Degrees offered, 3
 Departmental honors, 12
 Departmental student privilege, 12
 Developmental Studies, 14

Directed Study, 5
 Directory, 57; adjunct faculty, 60;
 administrative staff, 63; faculty, 57;
 trustees, 64
 Dismissal, academic, 14
 Drawing, 46; see Department of Physics and Pre-Engineering, 44
 Dropping courses, 9
 Early participation in graduation, 8
 Early warning system, 10
 Earth Science, 44, 46
 Economics, 21; see Department of Business, 18
 Education, Department of, 28; see individual departmental secondary education certification requirements; biology, 16; chemistry, 22; general science, 54; physics, 44; social studies, 54
 Engineering, 44; see Preengineering
 English, Department of, 30
 Faculty, 57; adjunct, 60; emeriti, 57
 Fine and Performing Arts, 32
 Foreign study, 5
 Forestry and Environmental Management Program, 16, 54
 French, 39; see Department of Modern Languages, 39
 Full-time status, 6
 General Education Core, 3
 General Science Certification, 54
 German, 39; see Department of Modern Languages, 39
 Grades, 9
 Grade appeal, 10
 Grade Point Average, 8, 10
 Graduation, 8
 Graduation, with honors, 8, 11
 Graduation requirements, 8
 Health, 43; see Department of Physical Education and Health, 43
 Health Care, 22; see Department of Business, 18
 Health Professions Advisory Committee, 52
 History, Department of, 36
 Honors, graduation, 11
 Honors courses, 4, 12
 Incomplete grades, 10
 Independent study, 5
 Individual program adjustments, 7
 Interdisciplinary programs, 52
 International Education Graduation Requirements, 4
 International Studies Minor, 55
 Internships, 6
 Joint institution programs, 5
 Junior year abroad, 5
 Language requirement for foreign students, 4, 35
 Leave of absence, 13
 Major, change of, 6
 Major, declaration of, 6
 Majors, list of academic, 3
 Mathematical Sciences, Department of, 37
 Meal exchange, 7
 Medical Technology Programs, 23; see Department of Chemistry, 22
 Minor, declaration of, 6

Minors, list of academic, 3
 Mission statement, 2
 Modern Languages, Department of, 39
 Music, 32
 Music education, 32; see Department Fine and Performing Arts, 32
 Music therapy, 32; see Department of Fine and Performing Arts, 32
 Occupational Therapy, Department of, 40
 Off-Campus Study, 5
 Overload credits, 7
 Pass/No pass grading, 10
 Part-time status, 6
 Philosophy, Department of, 42
 Physical Education and Health, Department of, 43
 Physics and Pre-Engineering, Department of, 44
 Plagiarism, 14
 Political Science, Department of, 46
 Preengineering, 5, 44; see Department of Physics and Pre-Engineering, 44
 Preforestry, 6
 Preallied Health Programs, 6, 59
 Premedical: program, 52 and Allied Health Program, 6, 59
 Pre-engineering, 6; see Department of Physics and Pre-Engineering, 44
 Preregistration, 9
 Probation, academic, 11
 Professional writing, 30; see Department of English
 Program Adjustments, Individual, 7
 Program Variations, options, 4
 Psychology, Department of, 47
 Purpose, Statement of, 2
 Quality points, 10
 Rank in class, 10
 Readmission, 11
 Registration, 8
 Religion, Department of, 48
 Repeating courses, 7
 Residency requirements, 8
 Schedule changes, 9
 Scholar's privilege, 12
 Social Studies Certification, 54
 Social Work, 51; see Department of Sociology/Anthropology/Social Work, 49
 Sociology/Anthropology/Social Work, Department of, 49
 Spanish, 39; see Department of Modern Languages, 39
 Special studies, 5
 Standards of academic integrity, 14
 Statement of Purpose, 2
 Student responsibilities, 6
 Study abroad, 5
 Theatre, 35; see Department of Fine and Performing Arts, 32
 Transcripts, 13
 Transfer credits, 13
 Trustees, 64
 Tutorials, 5
 Visual Arts, 32
 Withdraw: from classes, 9; from the College, 9
 Writing Competency Requirement, 3

Calendar 1989-90

Fall Semester

August	21-25	Faculty Meetings and Orientation
	26	Freshmen Arrive
	28	Registration Day; Evening Classes Begin at 6:30 p.m.
September	29	Day Classes Begin, 8:00 a.m.
	4	Labor Day — No Classes
	5	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	23	Parents Day
	7	Homecoming
	13-15	Fall Break — No Classes
November	18	Mid-Term
	22	Friday Schedule of Day Classes; Classes End at 5 p.m.
	23-26	Thanksgiving Recess
December	27	Classes Resume 8:00 a.m.
	8	Classes End
	11-16	Final Examinations

Spring Semester

January	8-12	Faculty Meetings and In-Service Programs
	15	Registration Day
	16	Classes Begin, 8:00 a.m.
March	2	Mid-Term
	3-11	Spring Break — No Classes
	12	Classes Resume, 8:00 a.m.
April	11	Easter Recess Begins 5:00 p.m.
	12-17	Easter Recess; No Classes
	18	Day Classes Resume 8:00 a.m.
May		Monday Schedule of Day Classes; Wednesday Evening Classes Meet
	4	Classes End
	7-12	Final Examinations
	19	87th Commencement

Summer Sessions

May 21-June 22	Summer Session I
June 25-July 27	Summer Session II
June 13-July 27	Evening Summer Session

Elizabethtown COLLEGE



1989-90 Academic Program



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Elizabethtown College is accredited by the Middle States Association of Colleges and Secondary Schools.

The policies and provisions contained in this catalog are subject to the right of the trustees, administration, and faculty to repeal, change, or amend them at any time.

The provisions of this booklet are not to be regarded as an irrevocable contract between Elizabethtown College and the student or between the College and the parents or guardians of the students.

Elizabethtown College complies with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable, federal, state, and local statutes, ordinances, and regulations. Elizabethtown College does not illegally discriminate against students, prospective students, employees, or prospective employees on the basis of race, color, religion, ethnic or national origin, personal handicap, age, or sex.

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The Academic Program



Contents

Educational Philosophy and Objectives	2
The Academic Program	3
Course Descriptions	16
Accounting	19
Biology	17
Business	19
Chemistry	22
Communications	24
Computer Science	26
Education	28
English	29
Fine And Performing Arts	31
(Art, Dance, Music, Theatre)	
History	35

Mathematical Sciences	37
Modern Languages	38
(French, German, Spanish)	
Occupational Therapy	39
Philosophy	42
Physical Education And Health	43
Physics And Pre-Engineering	44
Political Science	46
Psychology	47
Religious Studies	48
Sociology, Social Work And Anthropology	50
Interdisciplinary Programs	53
Directory	58
Index	67

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Elizabethtown College: Educational Philosophy and Objectives

The purpose of the founders of the College was to achieve "such harmonious development of the physical, mental, and moral powers of both sexes as will best fit them for the duties of life and promote their spiritual interests." The motto of the College for years expresses this goal: "Educate for Service."

The original charter statement of purpose identified the important outcomes of education as being the development of critical and constructive habits of thought; the capacity for clear and coherent self-expression; the understanding of the natural, social and cultural world; the acquiring of a sense of personal, ethical, and spiritual values and of responsibility to the society; and the acquisition of skills and knowledge in a specialization to make the student an effective and productive member of society.

In developing a statement of philosophy and objectives that both reflect our present understandings, the following represents a reasonably broad institutional consensus of the appropriate educational philosophy and goals for the years ahead to which the full College community can and should relate:

Founded by members of the Church of the Brethren in 1899, Elizabethtown College aims to develop sound intellectual judgment, keen moral sensitivity and an appreciation for beauty in the world. This educational process fosters the capacity for independent thought and commitment to personal integrity. In keeping with its historical and religious tradition, the College affirms the values of peace, justice, and human dignity, striving to achieve a distinctive blend of the liberal arts and professional studies. This union of the world of spirit and the world of work is expressed in the College motto, "Educate for Service," and on its seal, *Deus Lux et Veritas*.

The College fulfills this mission by:

- Striving to attain a diverse academic community.
- Promoting cultural pluralism and international understanding in a collegial community.
- Creating an environment that encourages the spirit of free inquiry, stimulates intellectual curiosity, and cultivates academic achievement.
- Developing the skills for critical analysis and effective communication.
- Designing programs that foster maturity, leadership, and responsible citizenship.
- Providing campus-wide support services necessary for the development of mind, body, spirit.

- Serving as a learning, resource, and cultural center for society at large.

The institutional goals for the academic program at Elizabethtown College, in outline, reflect this general statement of educational philosophy:

1. A threefold purpose in the education of students:
 - a. A general education (core) requirement developing analytical and relational process of thought, clear and coherent means of self-expression, and a growing understanding of self and environment through distributional and integrative requirements in the liberal arts.
 - b. A specific education requirement or major, preparing the student for advanced studies and/or career opportunities by adding the different experience of specialized in-depth knowledge to the breadth of the general educational requirements.
 - c. A body of electives ensuring flexibility in each student's program that will best suit individual needs and interests, whether in general or major areas of study.
2. Response to contemporary needs for greater international understanding, by providing general education in intercultural studies and languages.
3. Provision of support in both general education and major programs for cross-disciplinary and interdisciplinary education.
4. For major disciplines of study, inclusion of opportunities in most of the liberal arts traditions of sciences, fine arts, humanities, and social sciences, and in the professional areas; while maintaining balance between professional and liberal arts programs of study for majors.
5. Provision for adult educational opportunities in a variety of traditional and nontraditional modes, integrated as far as possible with the regular educational program and faculty.
6. Fostering an environment supportive of faculty research and professional development.
7. Supporting as a part of its regular educational program quality experiential-learning programs such as clinical experiences, supervised internships, field study and other off-campus courses, and similar activities.
8. Continuing to support or to develop as appropriate, strong cooperative programs with other institutions of higher learning.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of at least 128 semester hours of credit, a grade point average of at least 2.00 in the major, a grade point average of at least 2.00 overall, and the completion of all requirements of the major and the General Education Core.

The College offers four additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, the Associate of Arts, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B.S.
Business Administration, B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Early Childhood Education, B.S.
Economics (Business), B.A., B.S.
Elementary Education, B.S.
Engineering (Physics and Earth Science), B.A.
English, B.A.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages, B.A. (French, German, Spanish)
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.
Occupational Therapy, B.S.
Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A., B.S.
Religious Studies, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work (Sociology), B.A.
Sociology, B.A., B.S.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Art
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Communications
Computer Science
Economics (Business)
English
History
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Peace Studies (Interdisciplinary)
Philosophy
Physics
Political Science
Psychology
Public Administration (Interdisciplinary)
Religious Studies
Sociology
Statistics (Mathematics)

The Writing Competency Requirement

An incoming freshman whose record fails to demonstrate basic language skills and writing ability is required to take either (1) English 101 (Basic Writing) followed by English 102 (Expository Writing) or (2) English 102. A student who demonstrates a high level of proficiency in language and writing skills is permitted to proceed directly to English 105 (Introduction to Literature). *No credit is granted for English 101 if it is taken after the successful completion of English 102.*

The General Education Core

Through the General Education Core curriculum, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to pursue a general comprehensive education which complements both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: prescribed individual course requirements and area distribution requirements in which students may choose from

approved courses within the general prescribed academic area. (Approved courses are identified in the course listings.)

Alternatives to the Core curriculum, or deviations from it, must be approved in advance by the Academic Standing Committee.

Core Area Requirements

Area	B.A. Hours	B.S. Hours
Literature	6	6
Complete English 105 and one other course from among the English, French, Spanish, or German literature courses. Note: courses in composition, literary criticism, history of the language, professional writing, or the teaching of English do not fulfill the literature Core requirement.		

Modern Language	5	*
Complete Modern Language 112 or demonstrate competence at that level by taking a placement test. All students with more than one year of high school language study must take the placement test. Depending on language background and test results, students may merit exemption from Modern Language 112 and enroll in upper-level language courses, or take Modern Language 112 for credit and fulfill the language requirement, or take Modern Language 111 and 112 for credit and fulfill the requirement.		

**Some majors require a language for a bachelor of science degree; students should check the program description in this catalog.*

Foreign students whose degree or major requires a modern foreign language and whose native language is not English may have this requirement waived. The waiver requires: (1) successful completion of En 105 (and En 101 and/or En 102) and an upper level literature course, (2) written petition to the Academic Standing Committee by the student and advisor, and (3) written documentation to the Committee verifying the student's verbal and written fluency in a language or languages other than English.

Fine Arts	3	3
Complete three hours in selected art, theater, or music courses.		

Religion or Philosophy	6	6
Complete the required hours in philosophy and/or religion courses. <i>Note: Only one of Religion 215 or Philosophy 115 may be used toward the requirement.</i>		

History	6	6
Complete History 105 and one other history course.		

Social Science	9	9
Complete the required hours in economics, political science, psychology, anthropology, and sociology courses. <i>Note: History does not fulfill this requirement, nor does Social Work. Majors in economics, political science,</i>		

psychology and sociology must select courses outside their major department. Business majors not pursuing a concentration in economics may use upper-level economics courses to fulfill this requirement.

Mathematics	3	6
Complete the required hours in mathematics courses.		

Note: Mathematics 011 does not fulfill the mathematics Core requirement or count toward credit for graduation. Mathematics 211 and 212 fulfill core requirements only for elementary and early childhood education majors.

Science	8	8
Complete the required hours from among biology, chemistry, physics, and earth science courses. Students must take the associated laboratory if the course is to count for Core.		

Physical Education	4	4
Complete four activity courses, including at least one but not more than two aquatics activities. Physical Education 270 counts as three hours toward graduation, but fulfills only one credit toward Core. Physical Education 150, 160, 260 count for Core credit only once each. Physical Education 285 does not fulfill any part of this requirement. No more than six physical education credits may be counted for graduation. Course titles may not be repeated.		

No student who passes a swimming course may take the swimming proficiency test for credit. If more than one Aquatics course is taken, it must advance in difficulty.

A **swimming proficiency test** must be taken no later than the fall of the sophomore year. This test may be taken only once. A transfer student who desires to take the test must do so at the beginning of the student's first semester.

College Requirement

Area	B.A. Hours	B.S. Hours
International Education	6	6
All students must take a minimum of six semester hours of course work above the 100 level in foreign languages, foreign culture, or international affairs, with a predominantly contemporary content. This requirement can be met with courses taken in the Core, major, minor, or elective areas.		
The following courses have been designated to fulfill this requirement.		
Anthropology 202, 211, 307, 308.		
Business Administration 317, 371.		
Communications 372.		
Economics 307, 308, 371, 372.		
English 327, 328, 329.		
History 205, 216, 217, 218, 319, 320, 323, 324, 327, 328.		
Modern Foreign Languages (French, German, Spanish) 112,* 211, 212, 311, 312.		
Political Science 205, 301, 327, 342.		
Religion 221, 222.		

*Modern Foreign Languages 112 (5 credits) fulfills the 6-credit hour International Education requirement, and is the only 100-level course to do this.

The International Studies Committee will consider other 370 courses as they are offered and submitted to the committee.

Program Variations and Options

In addition to the majors and minors indicated above, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Honors Courses

Each year outstanding freshmen are invited into several honors courses in the General Education Program. Enrollments are limited to fifteen students each, thus allowing greater opportunity for student participation in class discussion. Honors courses are designated with an "H" preceding the course number on the semester schedule.

Special Studies

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued, securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Registrar at the beginning of the semester during which it will be completed. Application forms for Independent Study are available at the Registrar's Office.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional tuition charge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 18 hours as a result of the Directed Study registration are charged the current part-time rate for

tuition for those hours in excess of 18, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: Students must register for Directed Studies and Tutorials prior to beginning course work. Registration forms are available in the Registrar's Office.

Off-Campus Study

Study Abroad

The College participates in programs offering study abroad in Germany, France, Spain, China, and England.

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering a junior year of study in China, Germany, France, Japan, or Spain. Students may study at Phillips-Universität, Marburg/Lahn, West Germany; at the University of Strasbourg, France; at the University of Barcelona, Spain; Hokusei Gakuen University, Sapporo, Japan; or at Dalian Institute of Foreign Languages, Dalian, China. A wide selection of courses is offered in the social sciences and the humanities. Students are given intensive language instruction prior to the opening of the university semesters.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of German 212 and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of French 212 or Spanish 212, outstanding students who have completed French 112 or Spanish 112 will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country. The credits earned abroad are transferred toward the degree at Elizabethtown. A faculty advisor is in residence in Europe during the year.

About 25 students are accommodated at each university; Elizabethtown College has a quota of three or four for each. Interested students should confer with Dr. Sharon R. Trachte, BCA Program Coordinator, and their major advisor.

As part of the BCA program, the College offers a semester in England. Students attend full-time at St. Mary's College, Cheltenham, England, where they enroll in a Seminar in British Culture and Education, and select an additional three or four courses. Credit for these courses is applied toward the degree at Elizabethtown College. Fall semester students depart in early September and return before Christmas; spring semester students depart in late

January and return in late May. For information, contact Dr. Trachte.

Joint Institution Programs

In these programs students study at the College and at affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: preforestry with Duke University; preengineering with Pennsylvania State University; biology health professions and preallied health with Thomas Jefferson University.

In the **Preforestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Preengineering is a 3-2 program with Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of work in an engineering field, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from Pennsylvania State University. For further details, see the description in the Physics Department listing of the catalog.

The **Biology Health Professions** major is a 3-2 program with Thomas Jefferson University College of Allied Health Sciences. The student spends three years at the College; after a year at Thomas Jefferson, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional upper division program results in the awarding of a bachelor of science degree from Thomas Jefferson University. For further details, consult the Biology Department listing.

In the **Preallied Health** programs, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Biology Department listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students' education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Fine and Performing Arts, Chemistry, Occupational Therapy, and Sociology/Anthropology/Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the Registrar or Department Chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- a. All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- b. Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or better on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in progress at the time of the examination.
- c. For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Four of these credits may be applied to the General Education Core requirements in science.
- d. For the examination in English Composition, Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the General Education Core requirements.
- e. For the Mathematics Examination, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the General Education Core requirement in mathematics.

2. Subject Examinations

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty. There are two types of Challenge Tests: Tests for Academic Credit and Tests for Placement and/or Waiver.

Tests for Academic Credit are of two kinds: *Proficiency Tests* such as the swimming proficiency test; and the *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option.

Tests for Placement and/or Waiver comprise tests such as those given for placement in English, modern languages, or mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Challenge Tests given at the initiative of the College are administered without fee to the student; and there is no tuition charged for any academic credit awarded as a result of college-initiated testing.

There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a Test for Academic Credit is \$50; the fee for a Test for Placement and/or Waiver is \$25. In addition, appropriate tuition is charged for academic credit awarded as a result of student initiated Challenge Tests; the charge is 50% of the appropriate part-time tuition rate in effect at the time the test is administered.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the General Education Core, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Academic Advising

Each student who is enrolled in a degree program is required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors, and minors. (Certain nondegree students are also assigned advisors.)

Freshman Advising Program. The Freshman Advising Program is designed to touch on all aspects of the freshman experience. The goal is to assist freshman in realizing the maximum educational benefits available to them by helping them to better understand themselves and to learn to use the resources of the College to meet their special educational needs and aspirations. Course selection is included but is not the primary task to be accomplished.

Upperclassman Advising. Upperclassmen who have declared a major are assigned an academic advisor from their major department. Upperclassmen who have not yet declared a major are assigned an advisor from the Center for Counseling and Student Development.

All advisors work closely with students during the preregistration period for course selection for the coming semester. Consultation with the advisor also occurs during the schedule change period and the drop-add period at the beginning of each semester. Departmental advisors also provide assistance in regard to graduate or professional school and/or career planning.

Student Responsibilities

Students are required to consult with their major advisors as to course selection, course sequences, graduation requirements, etc. (Consultation with the second major or minor advisor is an expectation but not a requirement.) Preregistration Course Request Sheets, Request for Schedule Change forms, and Drop and Add forms require the major advisor's signature as do certain other forms and documents from the Registrar's Office.

The advisor's signature on various documents indicates that the student has consulted with the advisor; *however, it is the student's responsibility to ensure that all graduation requirements have been met and that other requirements, regulations, or deadlines have been observed.*

Checksheets for academic majors and minors are available in the Registrar's Office. These are helpful in noting the completion of program requirements. In addition, courses included in the major or minor GPA are noted; and a suggested sequence of study is provided for majors.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors and minors. Students are expected to consult with these advisors in regard to course selection, course sequence and graduation requirements.

Declarations and changes of majors and minors are facilitated in the Center for Counseling and Student Development. When a change of major or minor occurs, records are transferred from one department to another; however, the student must initiate the change in the Center.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported to the Registrar's Office immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Full-time/Part-time Status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and

pays full tuition and fees. A student taking 11 or fewer hours per semester pays the regular semester hour rate plus applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credit hours per semester to be eligible for intercollegiate athletic competition.

In a summer session, students holding a Pennsylvania Higher Education Assistance Agency (PHEAA) grant are considered full-time if they carry a minimum of 12 semester hours divided among the terms. Tuition and fees are paid according to the schedule in the summer session brochure. For further details concerning summer session, consult the summer session brochure available from the Registrar's or Continuing Education offices.

Course Load

Since the completion of at least 128 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of at least 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

A student with average grades may carry up to 18 semester hours of work in any given semester except the summer session, when the maximum is 14 semester hours for the 10-week period. A student who has achieved a cumulative grade point average of 3.00 or above may carry up to 20 semester hours credit in a semester, or 16 semester hours credit in a summer session. For each semester hour above 18 for which a student is enrolled in a given semester, an additional fee is charged, and approval by the Associate Dean of the Faculty is required. Students who wish to petition for an overload should obtain a form in the Registrar's office.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Registrar's Office. Failure to do so will result in a duplication of hours carried, a possible delay in graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated follow:

1. A student may repeat any course in which the student receives an *F* or *NP*.
2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's advisor and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a

course that is prerequisite to a General Education Core requirement. The student must repeat the course in which the *D* grade was received within one year of the original enrollment in the class (or the next semester in which the course is offered if the course is offered less frequently than once a year).

3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit are determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Registrar's Office. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of *C* or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior to* enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the Registrar. Students must request the Registrar's Office of the transferring institution to send an official transcript to the Registrar's Office at Elizabethtown College.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Registrar's Office, in person or by mail, at least one week prior to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/professional schools or for employment. Two copies of the final record are also available free to each student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Registrar's Office at least one week prior to the date needed. Federal law requires that all requests must be made in writing *by the student*. Telephone requests cannot be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Registrar's Office; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.
2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the Provost, who will direct warranted appeals to the Academic Standing Committee.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a nondegree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is no guarantee that a student will be registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit

for the next semester. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the advisor. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of Continuing Education for details about registration.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Registrar's Office.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds must be approved by the academic advisor and completed through the Registrar's Office. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Registrar's Office. The completed form must be signed by the academic advisor and returned to the Registrar's Office; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Registrar's Office. The completed form must be signed by the academic advisor and returned to the Registrar's Office; the course drop is not complete until this is done.

Class Absences and Withdrawal Policy

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor or the College may dismiss a student from a course for excessive absences. A student may appeal for reinstatement to the Academic Standing Committee.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Long-Term Absences

Long-term absences from all courses/campus may result in mandatory withdrawal from the College. After 15 consecutive class days of absence from all classes, a student is considered to have withdrawn from the College. (Students absent for verified medical reasons will be granted a Medical Withdrawal (see below).

Withdrawal

Withdrawal from Classes

Students withdraw from classes through the Registrar's Office. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or W/F. All withdrawals after the end of the eleventh week of the semester receive grades of W/F unless the withdrawal from College is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of W/F is calculated into the student average as though it were an F.

Withdrawal from College

Students who withdraw from the College during a semester also withdraw from all of their classes for that semester. Full-time students withdraw from the College through the Center for Counseling and Student Development; part-time students withdraw through the Registrar's Office. Students who withdraw during the semester are expected to leave the campus as of the effective date of their withdrawal.

For purposes of billing, room reservation, academic responsibility, etc., the effective date of withdrawal is the date on which the completed official notice is returned to the Center for Counseling and Student Development or the Registrar's Office. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical Withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstances. Medical Withdrawal assumes an incapacity that prohibits acceptable academic performance, not simply a hardship or inconvenience. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Medical Withdrawal is withdrawal from the College and,

therefore, from all courses. A student does not selectively withdraw from individual courses under the rubric of "medical withdrawal."

Readmission

Students who leave the College in academic good standing (minimum 2.0 cumulative grade point average) must contact the Admissions Office for readmission. Students who leave the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission (see page 12).

Leave of Absence

A student may take a leave of absence from the College to study abroad in the BCA program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Any administration fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$200 deposit must be returned to the Registrar's Office by May 1 or December 1 to ensure a place in the College and in the courses selected.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	Non-Pass (failure)
AUD	Audit

Quality Points

A 4-point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester
	Hour of Credit
A	4.0
A–	3.7
B+	3.3
B	3.0
B–	2.7
C+	2.3
C	2.0
C–	1.7
D+	1.3
D	1.0
D–	0.7
F, WF	0.0

Grade Point Average Calculation

The grade point average is dependent upon the credit hours attempted and the quality points accumulated. To determine the grade point average for a semester multiply the credit hours for each course by the quality points for the grade earned in the course, sum the quality points for the semester, and divide the total quality points by the total credits attempted for the semester. Courses in which a grade *F* or *WF* is received are included in the calculation. Courses in which a grade of *W* is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester GPA. For the major GPA, use all courses in the major department and all courses required for the major. For the minor GPA, use all courses in the minor department and all courses required for the minor.

Incomplete Grades

A grade of *I* may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of *I* are assigned for extenuating circumstances only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the *I* in cases of suspected academic dishonesty.

All grades of *I* received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of *F*.

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of *P*), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their required physical education courses on a pass/no pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).

2. The cumulative average must be 2.75 or higher.

3. The selected course may carry no more than four semester hours of credit and must be a free elective. It must be outside the major or minor department, may not satisfy a Core requirement, and may not be a course required by the major or minor.

4. No more than four courses in total (excluding physical education) may be taken under this grading option.

Pass/No Pass registration forms are available in the Registrar's Office. Once a course is registered under the Pass/No Pass option, it may not be changed. Grades of *D–* or higher are recorded as Pass; grades of *F* are recorded as Non-Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying *D* or *F* grades in 100 or 200 level courses at the end of the fifth week of the semester are notified of their deficient performance. Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits a junior; with 90 credits a senior.

Rank in Class

The student's rank in class at graduation is based on the credits, grades, and quality points earned at Elizabethtown College.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

<i>Semester hours</i>		<i>Cumulative</i>
<i>Attempted</i>	<i>with</i>	<i>Grade Point Average</i>
		<i>below:</i>
1-18		1.70
19-36		1.80
37-54		1.90
55-72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses per term.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is on academic probation. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) or on academic probation may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence from the College of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the Registrar.

Academic Honors

Dean's List

A full-time student who earns a quality point-credit ratio of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

Students who have earned at least 60 credits at Elizabethtown College and have attained a 3.75 cumulative quality point average are recognized as College Scholars for the succeeding academic year. They are awarded a special certificate and their status as College Scholars is recorded on their permanent records.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative quality point-credit ratio of 3.50 is graduated *cum laude*; a ratio of 3.75, *magna cum laude*; a ratio of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria include, but are not limited to, the following: the student must have a minimum G.P.A. of 3.5 in the major/minor and overall cum; possess outstanding abilities in areas such as research projects or papers, etc. and have pursued academically rigorous courses in the discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's Honor List during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis without registration or credit.

Honors Courses

Each year outstanding freshmen are invited into several honors courses of the General Education Program. Enrollment is limited to fifteen students each, thus allowing greater opportunity for student participation in class discussion.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. In addition, students who are close to completion of graduation requirements may petition for permission to participate in the May graduation ceremonies. In order to participate as "an early participant," the student *must have a 2.0 cumulative grade point average in the major and be in academic good standing (2.0 overall g.p.a.) at the time of the commencement ceremony*. In addition, the student must be close to completion of all graduation requirements. "Close to completion" normally means "not in excess of six credit hours of course work." Under no circumstances will approval be given for needing more than ten credit hours of course work. *No exceptions can be made to these standards.* Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work will participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed on the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit internship.

Credit Requirements

To receive a bachelor of arts or bachelor of science degree from Elizabethtown College, the student must earn a minimum of 128 semester hours of credit. (MA 011, DS 175 and DS 176 are not counted toward this 128-credit graduation requirement.) In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the course outline (see departmental listings for specific information).

Program Requirements

Students are required to successfully complete all requirements of the major, all of the General Education core requirements, and The College International Education requirement. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a quality point-credit ratio of at least 2.00, with a minimum average of 2.00 in a major (and a 2.00 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have a ratio of at least 2.00 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in the major, at least eight of which are at the upper level (normally 300 and 400 level), and 2) at least 30 of the last 60 credits.

Note: Credits earned at the University Center in Harrisburg, at the West Shore site in Camp Hill, or in the BCA program while the student is matriculated at the College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the catalog dated four years prior to graduation, or by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine requirements for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the Registrar by February 15.

Early Participation

Petitions for early participation in the May graduation ceremony must be presented in writing to the Registrar by February 15 and must include the reason(s) for the request and supporting rationale. The Registrar, in consultation with the Provost, will decide each case on its individual merit. *Approval is not automatic.* Early participants are identified by a special notation in the Commencement program.

In order to participate as "an early participant," the student *must have a 2.0 cumulative grade point average in the major and be in academic good standing (2.0 overall g.p.a.) at the time of the commencement ceremony*. In addition, the student must be close to completion of all graduation re-

quirements. "Close to completion" normally means "not in excess of six credit hours of course work." Under no circumstances will approval be given for needing more than ten credit hours of course work. *No exceptions can be made to these standards.* Diplomas are distributed to early participants at the next appropriate graduation date following actual completion of all work required for graduation. The student must contact the Registrar's Office to request the diploma, indicating the address to which the diploma is to be sent.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature are assumed by the Academic Standing Committee and the Academic Review Board.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Center for Counseling and Student Development, who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Board is comprised of three faculty members, two students, and one faculty member or administrator appointed by the president. The provost serves as convener of the board but he is not a member and does not vote in decisions made by the board. The board handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard To Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments.

With Regard To Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.
2. To request a hearing before the Academic Review Board when found by a faculty member to be in violation of the standards of academic integrity and to receive a written statement from that board summarizing the findings of the board and its disposition of the matter.
3. To request a hearing before the Academic Review Board when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.

4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably in academic matters and conduct themselves accordingly.

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of course assignments as well. Elizabethtown College uses *Sources: Their Use and Acknowledgment*, Hanover, N.H.: Dartmouth College, 1962, as the reference work on the subject of plagiarism; the booklet is available in the College Bookstore or the College Library and is provided to all new students as a part of orientation.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information for an assignment when such information is not appropriate for the assignment. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of *F* in the course and possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.
2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have another person in attendance, also.

3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A copy of this notification is sent to the Office of the Provost.

4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Board. The request for a hearing must be presented in writing to the provost within five days of receipt of the notice of information.

Academic Dismissal

The provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is the provost's judgment that academic dismissal is appropriate, he will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.

The student will have the option of accepting the provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the Academic Standing Committee within five days of receipt of the provost's decision.

Grade Appeals

Questions concerning grades should be called to the attention of the professor immediately after the official grade report is received from the Registrar's Office.

Procedures For Grade Appeals

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.

2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal. A request for the meeting must be submitted within thirty days of the date on which the grades are formally issued from the Office of the Registrar.

3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision.

4. The student will have the alternative, within ten days

of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the provost.

5. The provost will review the detail of the appeal. The Academic Review Board will hear warranted appeals as determined by the provost.

Developmental Studies

As part of Elizabethtown College's efforts to make a college education available to students with diverse talents, the Developmental Studies Program is designed for the motivated student with academic potential, but with less-than-adequate education credentials (SAT scores, high school grades, and/or class rank).

The Developmental Studies Program offers students several thrusts. First, it provides the student with a strong advising support system, through which assistance is readily available on all phases of college life. Second, the students take Introduction to College*, a course which develops a sense of responsibility in the students for their own college experience. Third, the program director serves as advocate for the serious, motivated student.

For freshmen only, the Developmental Studies Program exists to help the student make the transition from high school to college.

*DS 171 Introduction to College

3 credits. Designed to provide an opportunity for students to learn and adopt methods to promote their success in college. Topics cover strengthening skills in time management, test-taking, written and verbal report presentation, notetaking and listening, improving interpersonal communication and locating resources to help with personal, health, and academic concerns.

DS 175 English as a Second Language – Intermediate

2 credits. For English as a second language (ESL) students, a basic English course focusing on speaking; on listening, reading, and vocabulary skills that prepare students to understand lectures and textbooks; and on writing skills with emphasis on the sentence, paragraph, and short essay. Exemption based on TOEFL score and written essay. Credits do not count toward the 128 required for graduation.

DS 176 English as a Second Language – Advanced

2 credits. For English as a second language (ESL) students, a continuation of DS 175 with writing skills to emphasize the essay. *Prerequisite:* DS 175 or POI. DS 176 may be taken concurrently with En 101 with permission of ESL instructor. Credits do not count toward the 128 required for graduation.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All

Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the University Center, 2986 N. Second St., Harrisburg, PA 17110.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisors to develop individualized study plans leading to Associate, Bachelor of Professional Studies, or Bachelor of Liberal Studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to meet the external degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September, 1988, The Rev. Dr. William Sloane Coffin, Jr., president of SANE/FREEZE, Washington, D.C., spoke on "The College Community: Freedom and Responsibility."

Lecture Series

Three lectures are sponsored at Elizabethtown College through which national and international leaders speak on political, ethical, social, and economic topics of major importance. In 1989, the lectures were offered as part of a central theme, "The Marketplace is Changing: New Economic Challenges for the U.S." A special program, the Board of Trustees Symposium, was held in conjunction with the lecture series. The focus of the symposium was "The European Economic Community of 1992." Representatives from seven foreign nations and the United States presented papers and discussed the impact of the European community on world economic and political affairs.

Gen. Bernard W. Rogers, NATO Supreme Allied Commander from 1979-87, gave the symposium keynote address on "The United States of Europe: An Emerging Reality."

The lectures are:

The Frank S. Carper Lecture on Ethics, Business and the Professions is an endowed lectureship named in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The speaker in March, 1989 was Michael Novak, director of social and political studies, American Enterprise Institute for Public Policy Research, Washington, D.C. He spoke on "Democratic Capitalism: A Practical Vision of a Good Society."

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in

honor of the late John F. Chubb of the Class of 1961 who was a trustee of Elizabethtown College, and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown.

W. Michael Blumenthal, chairman and chief executive officer of UNISYS, and the U.S. Secretary of the Treasury from 1977-79, was the 1989 Chubb Lecturer. He spoke in April, 1989 on "The United States of America: Rediscovering Itself in a New Global Context."

The President's Lecture, first held in March, 1988, is a forum for a person of national or international reputation to speak on a contemporary issue. The theme in 1989 was World Economics.

William E. Brock, U.S. Secretary of Labor, 1985-87, U.S. Trade Representative, 1981-85, and chairman of the Republican Party, 1977-81, gave the President's Lecture in April, 1989 on "The Bush Administration's Agenda for the 1990's: Issues—Trade, Deficits, and Debt."

College Assembly

The series, popularly known as "Monday at 10," is a dedicated period on most Monday mornings throughout the academic year when people from diverse experiences discuss contemporary issues, or present cultural programs such as concerts, dramatic readings, and mime.

The series is planned to expand and enhance students' awareness of their culture, history, and environment.

Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text; the reader is referred to the appropriate department.

Accounting

See Department of Business, page 19.

Anthropology

See Department of Sociology/Anthropology/Social Work, page 50.

Department of Biology

Professors Dively, Heckman, Hoffman, Pepper
Associate Professors Laughlin (Chair), Polanowski

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The curriculum, leading to a Bachelor of Science degree in Biology, prepares students for the rigors of graduate school and professional schools of medicine, and for biologically-oriented employment opportunities.

The department involves students in research studies with professors through senior seminars and independent study projects.

The Department of Biology offers a choice of four majors leading to a bachelor of science. In addition, the department offers a biology minor and two programs leading to receipt of a degree from cooperating institutions.

The Bachelor of Science: Biology Major prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 412, and 12 additional hours in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 or 103, and 102 or 104; Mathematics 121, 151; and a foreign language through the 112 level or Computer Science 121 and 122.

The Bachelor of Science: Biology Major/Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Biology Major/Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University. The specific requirements are Biology 111, 112, 201, 202, 202L, and eight additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 101, 121; and Computer Science 120. In addition, nursing students must take Communications 301 and Physical Therapy students must take English 285B. In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University (three years for Physical Therapy) in Philadelphia. After completing 29 credits at Thomas Jefferson University, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Biology Secondary Education prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the *biology major* (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, and one course selected from 321 or 324-324L, and nine additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 or 103, and 102 or 104; Mathematics 121, 151; Psychology 105; Education 215, 305, 308, 309, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

The Bachelor of Science: General Science Secondary Education Major enables the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Dr. Hoffman.

The Biology Minor provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 or 105-105L; one course from 112, 106-106L, or 108-108L; 212

or 215-215L; one course from 201, 222, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 19 or 20, depending on whether Biology 212 is taken. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Hoffman from the Biology Department should work with the student and the student's major advisor.

The Biology Preforestry Program offers a biology concentration in the five-year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Biology Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University for the junior and senior years.* The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs.

*Physical Therapy requires two years at Elizabethtown College and three years at Thomas Jefferson University.

105 Principles of Biological Science

3 credits. (Core) Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *Corequisite: (to satisfy Core) Biology 105L (may not be taken for credit after completing Biology 111).* Staff.

105L Principles of Biological Science Laboratory

1 credit. (Core) Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106 Genetics, Evolution, and Man

3 credits. (Core) Designed for the nonbiology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. *Corequisite: (to satisfy Core) Biology 106L.* Spring semester. Staff.

106L Genetics, Evolution, and Man Laboratory

1 credit. (Core) A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106.* Spring semester. Staff.

108 Man and His Environment

3 credits. (Core) Designed for the nonbiology major. Discussion of basic principles of environmental interrelationships and a consideration of specific problem areas such as pollution, radiation, and population growth with regard to those principles. *Corequisite: (to satisfy Core) Biology 108L.* Prof. Laughlin.

108L Man and His Environment Laboratory

1 credit. (Core) Includes field trips to water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Prerequisite or corequisite: Biology 108.* Prof. Laughlin.

111 General Biology

4 credits. (Core) The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses beyond Biology 112. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit after completing Biology 105 without permission of instructor.* Staff.

112 General Biology

4 credits. (Core) The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and

physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology III.* Spring semester. Staff.

201 Human Anatomy

4 credits. (Core) A study of human structure at the tissue, organ, and system levels. Particular attention given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology III, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. (Core) A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology III, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. (Core) A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

212 Molecular Biology

3 credits. (Core) An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology II2 or permission of instructor.* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. (Core) A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor.* Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit. (Core) Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215.* Fall semester. Prof. Heckman.

222 Immunology

3 credits. (Core) A basic course encompassing immunity, serology, immunochemistry and immunobiology. Considered antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology II2 or permission of instructor.* Spring, alternate years. Prof. Polanowski.

235 General Microbiology

4 credits. (Core) A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology II2 and Chemistry 104 or 114, or permission of instructor.* Spring semester. Prof. Pepper.

311 Biological Instrumentation and Research Methodology

4 credits. (Core) A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Prof. Pepper.

313 General Ecology

3 credits. (Core) The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor.* Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. (Core) Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth,

competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313.* Fall semester. Prof. Laughlin.

321 Plant Physiology

4 credits. (Core) A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology II2, and Chemistry 104 or 114; or permission of instructor.* Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. (Core) A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology II2 or permission of instructor.* Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. (Core) An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. (Core) A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology II2.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. (Core) Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology II2.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. (Core) A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology II2.* Fall semester. Prof. Dively.

342 Development and Evolution

3 credits. (Core) A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215.* Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. (Core) A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology II2.* Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. (Core) A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology II2 or permission of instructor.* Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. (Core) A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114.* Offered upon demand. Prof. Pepper.

370-379 Special Topics in Biology

Variable credit. (Core) Courses of a specialized nature reflecting the interests of the instructor. Courses offered on a random basis. Staff.

411-412 Seminar in Biology

0 and 2 credits, respectively. (Core) An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311.* Spring semester. Staff.

480–489 Independent Study

Variable credit. (Core) Designed to allow the student to do independent research in some phase of biology. *Prerequisites:* 16 credits in biology, permission of instructor and Department Chair. Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *corequisite:* Education 308. Fall, alternate years. Prof. Hoffman.

Department of Business

Professors Buffenmyer, Fazzi, C. Kreider
Associate Professors Evans, Giptis, Hoppie, Neyer, Pomroy,
Stone (Chair), Trostle
Assistant Professors Beyerlein, S. Dolan (Associate Chair), Hill,
Moyer, Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations. The department's goal is to offer students a broad understanding of the nature of business and its role in society, and to provide the foundation for graduate study, continuing self-education, and personal development.

The Department of Business offers three majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the General Education Core, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrating in one or more of six areas: *accounting, computer science/business information systems, economics, finance, management, or marketing*. A student may also select a secondary area of concentration in *communications or international business*.

Business administration students may also major in forestry and environmental studies. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Arts or Science in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. In consultation with the department advisor, the elective courses should be tailored to the student's area of interest.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 101, BA 265, BA 330, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Accounting

A major in accounting includes Accounting 105, 106 (Ac 107–108 may be substituted), 205, 206, 305, 306, 12 additional semester hours in accounting; Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151.

Business Administration

A major in business administration includes Accounting 107, 108, (Ac 105–106 may be substituted); Business Administration 215, 248, 265, 325, 330, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration.

For an **Accounting Concentration**, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A **Computer Science/Business Information Systems Concentration** requires Computer Science 121, 135, 335, 340. An **Economics Concentration** requires Economics 301, 302, and two other economics courses. A **Finance Concentration** requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The **Management Concentration** requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A **Marketing Concentration** requires Business Administration 311, 498, and two other marketing courses from the departmental advising sheet.

A **Secondary Concentration in International Business** requires competency at the 112 level in a modern language, Anthropology 211, Political Science 205, Economics 307, and two other courses from the departmental advising sheet. A **Secondary Concentration in Health Science** requires four additional courses from biology and/or chemistry according to the departmental advising sheet. A **Secondary Concentration in Communications** requires Communications 105, English 185, and three other courses from the departmental advising sheet.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics; Computer Science 120, Mathematics 121, 131, and 151; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may *not* enroll in Accounting 107 or 108 unless the department specifically allows them to do so. Likewise, students who complete 107 may *not* enroll in 105 or 106. The proper course sequence is either 105–106, or 107–108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite:* Accounting 105. Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite:* Accounting 107. Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite:* Accounting 106 or permission of the instructor. Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite:* Accounting 205. Spring semester. Prof. Fazzi.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites:* Accounting 301, 206 or permission of the instructor. Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite:* Accounting 106 or 108; or permission of the instructor. Fall semester. Prof. Beyerlein.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite:* Accounting 305. Spring semester. Prof. Beyerlein.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite:* Accounting 106 or 108. Spring semester. Prof. Neyer.

370-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite:* Accounting 206. Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite:* Accounting 206. Fall semester. Prof. Pomroy.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites:* Accounting 302, 405, 406; or permission of the instructor. Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite:* approval of the department chair. Prof. Fazzi.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites:* approval of the department chair and the Provost.

499 Seminar in Accounting

3 credits. A study of selected topics currently under discussion in the accounting field. A major research project is required. Offered upon student demand and faculty availability. *Prerequisite:* permission of the instructor. Spring semester.

Business Administration

111 Document Processing I

3 credits. A brief introduction to keyboarding with a greater emphasis upon formatting techniques utilizing the microcomputer and a word processing software application. Fall semester. Prof. C. Kreider.

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. *Prerequisite:* or corequisite: Economics 102. Profs. Hill, Moyer.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business; includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisites:* Mathematics 151, 117. Profs. Beyerlein, Trostle.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites:* Business Administration 215, Mathematics 151. Fall semester. Prof. Hill.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisite:* Business Administration 215 or permission of the instructor. Spring semester. Prof. Moyer.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites:* Business Administration 215, 265. Fall semester. Prof. Moyer.

316 Marketing Management

3 credits. The formulation of marketing policies and the planning techniques for embodying these policies in marketing programs. Case analysis is stressed. *Prerequisites:* Business Administration 215, 248, 265. Spring semester. Prof. Hill.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite:* Business Administration 215. Fall semester. Prof. Buffenmyer.

319 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during, and after a purchase. Emphasis is on understanding and predicting the individuals consumption patterns so that effective marketing strategies can be developed. *Prerequisites:* Business Administration 215. Fall semester. Prof. Moyer.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite:* Accounting 106 or 108. Profs. Beyerlein, Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Fall semester. Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of the instructor.* Spring semester. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Profs. Hill, C. Kreider.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites: Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

370–379 Special Topics

3 credits. Topics and problems of current relevance in business.

371 International Business Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite: Business Administration 265.* Prof. Buffenmyer.

373 International Comparative Management

3 credits. A state of the art study of international comparative management and its usefulness and influence upon managers in the United States. *Prerequisite: Business Administration 265.* Fall semester, 1989. Prof. Stone.

377 Fundamentals of Materials Management

3 credits. An overview to the field of materials management and physical distribution. Topics covered include all materials management functions; production planning and scheduling, inventory control, market analysis, materials handling, procurement transportation, warehousing and physical distribution. *Prerequisites: Accounting 108, Economics 102, Business Administration 265, Mathematics 151, or permission of the instructor.* Fall semester. Staff.

378 Purchasing Management

3 credits. A basic overview of the purchasing function. Topics covered include organization of purchasing, policies and procedures, sourcing, negotiations, make or buy, legal considerations, quality control, procurement of capital equipment, impact of computerization, and vendor evaluation. *Prerequisites: Business Administration 248, 331, 377; Computer Science 120; or permission of the instructor.* Spring semester. Staff.

379 Inventory Management and Forecasting

3 credits. A conceptual foundation and understanding of forecasting methodology for the materials function in operations; various inventory management systems, considering the problems of changes and constraints on inventory structures, inventory control procedures, accounting aspects, physical control, and simulation as an inventory modeling tool. *Prerequisites: Business Administration 378, or permission of the instructor.* Staff.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite: Business Administration 325.* Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite: Business Administration 325.* Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites: Business Administration 248, 369; Economics 102.* Spring semester. Prof. Stone.

467 Personnel Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite: Business Administration 265.* Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite: Business Administration 369 or permission of the instructor.* Fall semester. Prof. Muston.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite: approval of department chair.* Prof. Buffenmyer.

480–489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites: approval of the department chair and the Provost.*

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisites: senior status and permission of the instructor.* Prof. Muston.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites: Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor.* Spring semester. Prof. Moyer.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites: Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor.* Profs. Buffenmyer, Muston.

Economics

101 Principles of Economics I

3 credits. (Core) The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. Does not fulfill Core requirement for students majoring in the business department. Fall, Spring semesters. Staff.

102 Principles of Economics II

3 credits. (Core) Topics include elasticity, consumer behavior, production costs, market structures (competition, oligopoly, monopoly), and resource pricing. Does not fulfill Core requirement for students majoring in the business department. Fall, Spring semesters. Profs. Evans, Hoppie.

301 Intermediate Microeconomic Theory

3 credits. (Core) An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Fall semester, even-numbered years. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. (Core) Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Spring semester, even-numbered years. Prof. Hoppie.

303 Money and Banking

3 credits. (Core) A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisites: Economics 101, or permission of the instructor.* Spring semester. Prof. Evans.

304 Public Finance

3 credits. (Core) An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisites: Economics 102.* Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. (Core) The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Spring semester, even-numbered years. Prof. Hoppie.

307 International Economics

3 credits. (Core) The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite: Economics 101 or permission of instructor.* Fall semester, even-numbered years. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. (Core) Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite: Economics 101 or permission of the instructor.* Fall semester, odd-numbered years. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. (Core) An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Fall semester. Alternate years. Prof. Evans.

370-379 Special Topics

3 credits. (Core) Topics and problems of current relevance in economics.

372 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Fall semester. Prof. Hoppie.

480-489 Independent Study

Variable credit. (Core) Independent study and research on a problem or topic in the field of economics. *Prerequisites: approval of the department chair and the Provost.*

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite: permission of the instructor.* Fall semester. Odd numbered years. Prof. Gliptis.

Business Administration

See Department of Business, page 19.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology Program*), Ranck, Spangler
Associate Professors Reeder, Schaeffer (*Chair*)

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their General Education Core requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations; and minors in chemistry and biochemistry.

The Bachelor of Science in Biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Premedical and other health professions programs are discussed on p. 53.

The Bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum; the medical technology curriculum; and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the **medical technology curriculum** offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, New Jersey), York Hospital, Lancaster General Hospital, St. Joseph Hospital (Lancaster), Abington Hospital (Abington, Pennsylvania) and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the degree is granted. It is the student's responsibility to keep the Registrar's office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with the Registrar in January of the year of the clinical work.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's advisor and the department chair. Students planning much work in chemistry should consult with a departmental advisor as early as possible to plan the sequence of courses in chemistry, mathematics, physics, biology, and modern foreign language which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to ensure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-2, 461-2, 490 or 496 or 451, 491 or 497; Biology 111, 112, 324, 324L; 9 semester hours of additional biology and/or chemistry, 6 of which must be in biology; Computer Science 115; Mathematics 122; Physics 102 or 104; and Modern Language*.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 346, 343, 344, 352, 361-2, 402, 421, 461-62, 451, or 490 or 496, 491 or 497; Computer Science 115; Mathematics 222; Physics 102 or 104; and Modern Language*.

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; Biology 111, 112, 222, and 235, and electives to total a minimum of 16 semester hours; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101 or 103. For students attending Elizabethtown for three years, these required courses plus General Education Core and electives must total 100 semester hours. The clinical year includes a minimum of 28 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, 490 or 496 or 451, 491 or 497; Mathematics 122; Physics 102; two additional courses in biology or chemistry; Modern Language*.

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102 or 104; Modern Language*; Psychology 105; and Education 215, 305, 308, 309, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see p. 55.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102 or 104; Modern Language*; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 346, 352, 361-2, 461-2, 490 or 496 or 451; Computer Science 115; Mathematics 222; Physics 202; Modern Language*; and a minimum of three courses from the following: Chemistry 402, 421, 491 or 497; Mathematics 362; all 300–400 level Physics courses.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of chemistry.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

*A modern language is defined as one taught by the Department of Modern Language at Elizabethtown College or specifically approved by the Department of Chemistry. A chemistry or biochemistry student may fulfill the Department language requirement in any one of the following ways:

- 1) Proving competence in a modern language at the 112 level by examination.
- 2) Satisfactory completion of a 112-level modern language course.
- 3) Satisfactory study of a second modern language, not previously studied by the student, as determined for each individual by the department faculty.

101 General Chemistry I

4 credits. (Core). A general survey introducing the principles of chemistry. Topics include stoichiometry, atomic structure, bonding and geometry, states of matter, reactions, and solutions. Hours: lecture 3, laboratory 3. Fall semester. Profs. Reeder, Schaeffer.

104 General Chemistry II

4 credits. (Core). A continuation of Chemistry 101. Topics include colligative properties, thermodynamics, kinetics, equilibria, electrochemistry, and introductory organic and biochemistry. Hours: lecture 3, laboratory 3. *Prerequisite:* Chemistry 101. Spring semester. Prof. Reeder.

113 Organic Chemistry I

4 credits. (Core) The introductory course for those students who require more than one year of chemistry. A study of stoichiometry, bonding, geometry, equilibrium, kinetics, and instrumentation applied to carbon compounds. Hours: lecture 3, laboratory 3. *Prerequisites:* high school chemistry and algebra or equivalent. (Only 2 credits are awarded for Chemistry 113 for those students who have satisfactorily completed Chemistry 104.) Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. (Core) A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite:* Chemistry 113. Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or co-requisite:* Chemistry 114; permission of instructor. Spring semester. Prof. Proctor.

213 Analytical Chemistry I

4 credits. (Core) Quantitative analysis integrating classical and instrumental methods. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 114. Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. (Core) A continuation of Chemistry 213, with added emphasis on instrumental methods and computer systems interfacing. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 213. Spring semester. Prof. Hedrick.

242 Chemical Equilibrium and Kinetics

3 credits. (Core) Thermodynamics as applied to chemical equilibria in ideal and nonideal, homogeneous, and heterogeneous systems. Kinetics, ionic solutions, and electrochemistry are also treated. *Prerequisites or co-requisites:* Chemistry 214, Mathematics 122, Physics 102. Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. (Core) The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites:* Chemistry 213 and Biology 112 or its equivalent. Fall semester. Prof. Spangler.

324 Biochemistry II

3 credits. (Core) A continuation of Chemistry 323. *Prerequisite:* Chemistry 323. Spring semester. Prof. Spangler.

326 Techniques of Biochemistry I

1 credit. (Core) Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite:* Chemistry 323. Fall semester. Prof. Spangler.

327 Techniques of Biochemistry II

1 credit. (Core) A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite:* Chemistry 326; *corequisite:* Chemistry 324. Spring semester. Prof. Spangler.

343 Atomic Structure (Physics 343)

3 credits. (Core) The history and principles of quantum theory, radiation, atomic spectra, and the extranuclear structure of the atom. *Prerequisite:* Chemistry 242. Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. (Core) An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite:* Chemistry 343. Spring semester. Prof. Ranck.

346 Atomic Structure Laboratory (Physics 221L)

1 credit. (Core) (Description, see Physics 221). *Pre- or corequisite:* Chemistry 343. Fall semester. Prof. Ranck.

352 Advanced Chemistry Laboratory I

3 credits. (Core) Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite:* Chemistry 344. Spring semester. Prof. Ranck.

361, 362 Chemistry Seminar I, II

2 credits. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. Hours: seminar 1, laboratory 2 (Fall). Seminar 1, Spring semester. Fall, spring semester. Prof. Schaeffer.

370-379 Special Topics in Chemistry

Variable credit. (Core) Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites:* permission of instructor and department chair. Staff.

402 Advanced Inorganic Chemistry

3 credits. (Core) A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite:* Chemistry 344. Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. (Core) A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite:* Chemistry 344. Fall semester. Prof. Spangler.

451 Advanced Chemistry Laboratory II

4 credits. (Core) Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite:* Chemistry 242. Fall semester. Prof. Schaeffer.

461, 462 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which the student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 461. Hours: seminar I. Fall, spring semester. Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control.

Clinical Chemistry—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

490-495 Research in Chemistry

Variable credit. (Core) An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* permission of instructor. Staff.

496-499 Independent Problems in Chemistry

Variable credit. (Core) An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* Permission of instructor. Staff.

Education 305 Practicum in Secondary Education: Science

3 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *corequisite:* Education 308.

Department of Communications

Professor Moore (Chair)

Associate Professors Smith, Kivijarvi

Assistant Professors Byrne, Wennberg.

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the local access cable television production facility, ECTV, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, International Association of Business Communicators (Elizabethtown College Chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 48 credit hours required for a Bachelor of Arts degree with a **communications major** include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 215, 225, 235, 248, 485; Computer Science 120 or 121 (Computer Science 121 is required before further computer science courses can be taken); one English Professional Writing Course; and 15 credit hours in a concentration.

Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of career interest.

Prior to preregistration for the junior year the student must elect a communications concentration which requires 15 credit hours. The Department offers **three concentrations**.

The Corporate Media concentration prepares a student to design, produce, and manage a variety of internal/external communications functions for business, industry, and other institutions. The student is required to choose two courses from the Business Department: BA 215, 265, or 312. Also required is one upper division communications elective (either 336 or 348) and two approved electives to be chosen from the following: Communications 304, 316, 336, 348; one additional Professional Writing Course; Business Administration 355, and a choice of Business Administration 369 or Sociology 360, or Psychology 414.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are either Communications 301 or 304, Communications 351 and 412, and two approved electives to be chosen from the following: Communications 311, 314, 316, 348, 422; Business Administration 215, 312, 355; one additional Professional Writing course; Political Science 333; and a choice of Business Administration 369, Sociology 360, or Psychology 414.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcasting and journalism. Required are Communications 311 and either 314 or 316, one upper division Communications elective (304, 314, 316, 321, 336, 411, or 422), and two approved electives to be chosen from the following: Communications 304, 314, 316, 321, 336, 411, 422; Business Administration 312; Political Science 333.

A major is permitted to count no more than 57 credits in communications courses toward graduation requirements. Students may not count a course towards major requirements and those of the Core. One course may fulfill only one requirement.

A **minor in communications** is offered to students majoring in other departments. The minor permits a student to reach a level of competency in written, spoken, and visual communications to complement their primary area of preparation. The 24 credit hours required for a minor in communications include Communications 115, 125, 225, 235, 205 (repeated for two semesters), and 12 credit hours of approved departmental electives at or above the 200 level.

Admission Requirements for Communications Majors and Minors

All students accepted into the communications major or minor must demonstrate competency in writing and keyboarding. Writing competencies are determined by the Department of English. Students performing below an acceptable level are placed in writing courses designed to improve skills. Individuals who have not earned a C or better in a high school or equivalent typing course are placed by the department in an elementary typing, keyboarding, or word processing course. Successful mastery of these competencies is required for a student to continue in the program.

On-campus students seeking to transfer into the department as a major (or to declare a minor) must seek admittance by making application with the department chairman, have an interview with a department faculty member, and have a minimum 2.0 GPA.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practica often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practica are not repeatable and may count as elective credit within the major. Internship credits count only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 150 opportunities already negotiated with regional communications organizations.

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the college. The computer is needed first in the computer science course or Com. 215.

105 Basic Speech

3 credits. Basic instruction in developing poise and confidence in speaking. Emphasis is placed on verbal and nonverbal communication, research, outlining, speech preparation, use of visual aids, and the rudiments of group dynamics and discussion. Staff.

109 Human Communication

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on communication on an individual and interpersonal level, examining such aspects as speech production, sender/receiver relationships, listening, non-verbal communication and the use of symbols. The use of communication in groups and discussion techniques is examined. Students explore forms of public address and mass media from a human communication perspective. Profs. Bousliman, Byrne.

115 History and Theory of Communication

3 credits. Communication theory—its history, scope, application, and research methods employed. Significant individuals and events in the history and development of the field of mass communication are studied, as well as various mediums of communication. Prof. Moore.

125 Basic Production

3 credits. The design, theory, and development of production skills in a variety of audio visual materials, photography, and entry-level graphics. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials. A 35mm single lens reflex camera and electronic flash are necessary to complete the required projects. Students are required to purchase various production materials for the course. Prof. Wennberg.

205 A—D Applied Communications

No credit. Four semesters of participation in approved cocurricular activities are required of all majors. All participants must meet the standards of each activity in order to count toward meeting the requirement. Of the four semesters, three must be in different approved activities which include: a. WWEC-FM, b. Forensics, c. *Etowahian* and *Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any two activities. Enrollment open only to communications majors or minors. A student is to enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisite: Communications 105 or 109.* Offered each semester. Profs. Smith, Bousliman.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of computer graphics are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 or 121. (Prerequisites for Professional Writing students: English 185 and one Professional Writing course at or above the 200 level.)* Prof. Bousliman.

225 Audio Production

3 credits. The form and methods of elementary audio production are explored. In addition to theory and the development of basic skills, a student becomes knowledgeable in basic script writing. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video Production

3 credits. The use of video production equipment, including cameras, recorders, lighting, audio, switching, editing, and graphic techniques. Basic script writing and production planning skills are developed. Students are required to purchase production materials. *Prerequisites: Communications 125 and 225.* Prof. Kivijarv.

248 Communication Law and Issues

3 credits. Communication law and relevant issues within the field of communications. The history and effects of law, as well as past and current issues affecting the media. Students explore relevant case studies and evaluate their impact and possible future trends. *Prerequisite: Communications 115 or permission of instructor.* Offered each semester. Profs. Kivijarv, Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the

personal, education, and organizational levels. *Prerequisite: Communications 105 or 109 or permission of instructor.* Fall semester. Prof. Bousliman.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. *Prerequisite: Communications 105 or 109 or permission of instructor.* Spring semester. Prof. Bousliman.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of instructor.* Fall semester. Prof. Byrne.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: Communications 311 or permission of instructor. (Professional Writing students: two Professional Writing courses and permission of the instructor.)* Spring semester, odd years. Prof. Byrne.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, and editing copy, continuity, and news for radio and television. *Prerequisite: Communications 225, 235, 311, or permission of instructor.* Spring semester. Staff.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites: Communications 225 and 235.* Fall semester, even years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites: Communications 125, 225, and 235. 205D (ECTV) may be corequisite.* Spring semester. Prof. Kivijarv.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisite: Communications 125, 215, 225, or permission of instructor.* Fall semester, odd years. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite: English Professional Writing Course or permission of instructor.* Fall semester. Prof. Byrne.

370–379 Special Topics

Variable credit. Periodic offering of the Department or directed study in topics of special interest to advanced majors. Staff.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. *Prerequisites: Communications 125, 225,*

and 235, or permission of instructor. Fall semester, even numbered years. Prof. Moore.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite: Communications 351.* Spring semester. Prof. Byrne.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisite: Communications 235, 248.* Fall semester, odd numbered years. Prof. Kivijarv.

470–479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professional in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisite: Practicum—at least junior standing; campus-based sponsor; elective credit in the major; may not be repeated. Internship—senior standing, (2.70 GPA/3.0 GPA in the major); full-time for an entire semester off campus; general (free) elective credit only.* Prof. Moore.

480–489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites: at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite: senior standing.* Profs. Moore, Wennberg.

Department of Computer Science

Professor C. Kreider

Associate Professors Leap (Chair), Tulley

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers two majors—one in computer science, and the other in computer science/business information systems. Both provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 8250 cluster is used primarily for administrative purposes. The VAX 11/780, is dedicated to academic use.

The College also has a variety of micro and personal computers available. These include Apple, IBM, and Zenith personal computers. Interconnection between the computers is provided.

The department strongly recommends that students purchase their own IBM-compatible personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase Zenith, IBM and Apple PC's at excellent prices.

Major software systems available on the computers include most major computer languages (Ada BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, Dbase III+, Lotus 1-2-3, and WordPerfect); both CODASYL network type and relational data base management systems; and a screen forms management system. The College has several word processing packages in use.

All computer science majors and students enrolled in courses requiring use of the VAX computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses, including Computer Science 121, 122, 221, 222, 332, 341, and 490.

The computer science major is further required to take Computer Science 321, 322, and either 421 or 422, plus nine credits of computer science electives; Mathematics 121, 122, 151, 201, and one course chosen from 131, 222, 252; and an area elective which consists of four courses in one area other than computer science. Area elective courses may not be chosen from among those required for or elected to meet Core or international studies requirements and must be approved by the computer science faculty advisor. A minor in another field also satisfies this area elective requirement.

The computer science/business information systems major is further required to take Computer Science 135, 335, 409, and nine credits of computer science electives; Mathematics 117, 151, and 131; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of an appropriate programming language, data representation, file handling, and the use of subprograms. (Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor.) Staff.

120 Introduction to Micro Computer Applications

3 credits. An overview of computer concepts, uses, and issues. Software packages and computer applications (database, spreadsheet, and word processing) are a major component. Staff.

121 Computer Science I

1 or 3 credits. The introductory concepts of computer organization, data representation, algorithmic development and structured programming. Operating systems and I/O devices are covered as they relate to the user. The student is expected to master the fundamentals of a high-level programming language. *Prerequisites:* high school algebra and trigonometry. (Students who have successfully completed Computer Science 115 will receive one credit for the course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis, recursion, internal sort/search methods, string processing, simple data structures and file processing. Assembly language concepts and internal operations of the C.P.U. are introduced. *Prerequisite:* Computer Science 121. Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite:* Computer Science 121. Staff.

221 Algorithms and Data Structures

3 credits. Methods for structuring data and the algorithms for handling them are developed. Topics include abstract data types, including stacks, queues, linked lists, trees, and storage allocation and management. *Prerequisite:* Computer Science 122. Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite:* Computer Science 122. Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. *Prerequisite:* Mathematics 151. Fall semester.

322 Formal Languages

3 credits. The theoretical and practical analysis of the syntax of programming languages. Topics include the concepts and terminology associated with grammars, finite state machines, and parsing by recursive descent. *Prerequisites:* Computer Science 221, 321. Spring semester. Prof. Tulley.

332 Computer Organization

3 credits. Introduction to Boolean algebra, logic circuit and design, and their use in computer architecture. Basic parts of computer systems are studied, including storage, control, and input/output systems. *Prerequisite:* Computer Science 222. Fall semester. Prof. Leap.

333 Computer Systems Interfacing

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. Prof. Leap.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite:* Computer Science 135. Staff.

340 Business Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, and information; systems design; and an investigation of information systems of the various functional areas within the organization. *Prerequisites:* Computer Science 120 or 121; Business Administration 215, 265. Spring semester. Prof. Kreider.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisites:* Computer Science 121 and either 122 or 135. Fall semester. Staff.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites:* Computer Science 221; Mathematics 151; or permission of instructor. Fall, alternate years. Prof. Tulley.

361 Computer Graphics

3 credits. Introductory concepts of computer graphics, including hardware, software, data storage and man/machine interaction. The student is expected to become conversant with computer graphics hardware and be able to create software to provide the interactive generation of graphical output.

Prerequisites: Computer Science 221 and either Mathematics 172 or Mathematics 201. Fall semester. Prof. Chiang.

370-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite:* permission of instructor. Staff.

409 Data Base and Information Systems

3 credits. A study of information systems design and data base management techniques. Topics include information retrieval theory, data base design, data models, maintenance, file security, data reliability, CODASYL recommendations on DBMS. *Prerequisites:* Computer Science 335 and either Computer Science 221 or permission of instructor. Spring semester. Prof. Chiang.

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers, interpreters, and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites:* Computer Science 222, and either Computer Science 322 or permission of instructor. Fall semester. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, device drivers, and interrupt handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites:* Computer Science 332. Spring, alternate years. Prof. Leap.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite:* approval of computer science faculty. Staff.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite:* approval of computer science faculty and Dean of the Faculty. Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal and a final report and defense of work. *Prerequisites:* junior or senior status and permission of instructor. Staff.

Earth Science

See Department of Physics and Pre-Engineering, page 44.

Department of Education

Professor Rice (*Elementary Education Coordinator*)
Associate Professors Bowers, Callenbach, Fox, Orlando (*Chair*)
Assistant Professor Benelli (*Early Childhood Coordinator*)

Bachelor of Science

The department offers three major certification programs—Early Childhood (N-3), Elementary (K-6), and Secondary (7-12)—combining a strong liberal arts education with the development of high professional competence. Complementing the General Education Core and, in secondary certification, the student's academic major,

the certification programs bring together in a creative way the student, the school, and the subject to be taught. The department further stresses the importance of supervised field experiences which complement on-campus courses in education.

Admission to Teacher Education Program

All applicants who plan to teach must, by the time they have completed Education 235 or 305, file a written application for admission to the Teacher Education Program and meet the qualifying criteria of the Department of Education: proficiency in English and speech, good physical and mental health, a grade point average of at least 2.0, approval of the Office of Student Affairs, satisfactory evaluation and recommendation by the members of the Department of Education and approval by the major department of prospective secondary school majors.

Note: Students who fail to meet these criteria as applicants, or who later fail to maintain satisfactory progress, are counseled out of the program and directed into other areas of endeavor.

Progress Toward Program Completion

1. Students are evaluated at the conclusion of each semester after admission into the program, and may be advised to withdraw at any time the department determines that withdrawal is in the best interests of the College, the program, and the student.
2. A grade point average of 2.0 is required for enrollment in any Education course except Ed 205 and Ed 225.
3. Any grade below C in the teaching major after completion of the 100-level courses will disqualify a student from certification.
4. Students should apply for certification during the semester in which they will graduate. Should they apply after they have graduated, they must satisfactorily complete whatever additional requirements are then in effect before they can receive certification.

Certification Program Requirements

The Secondary Certification Program (accompanied by the bachelor of arts or bachelor of science degree, depending on the student's academic major):

- A. General Education Core as specified by the College.
- B. Academic major as outlined by each program area which supports a certification program: English, Mathematics, Science (Biology, Chemistry, Physics, and General Science), Social Studies.
- C. Professional education requirements: Education 215, 305, 308, 309, 415, 473.
- D. Satisfactory completion of the Pennsylvania Teacher Certification Testing Program. Basic Skills and General Knowledge Test prior to enrolling in Education 305.

The Elementary Education Major (bachelor of science degree):

- A. General Education Core as specified by the College. Psychology 105 must be taken as part of the social science Core requirement.
- B. Professional education requirements: Education 205, 225, 226, 227, 235, 255, 325, 335, 355, 356, 365, 472, 490-498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305.
- C. Electives
- D. Satisfactory completion of the Pennsylvania Teacher Certification Testing Program. Basic Skills and General Knowledge Test prior to enrolling in Education 225, 235, 255.

The Early Childhood Education Major (bachelor of science degree):

- A. General Education Core as detailed by the College. Psychology 105 must be selected as part of the social science Core requirement.
- B. Professional education requirements: Education 205, 225, 226, 227, 235, 255, 315, 320, 325, 335, 356, 365, 471, 490-498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305.
- C. Electives
- D. Satisfactory completion of The Pennsylvania Teacher Certificate Testing Program Basic Skills and General Knowledge Test prior to enrolling in Education 226, 235, and 255.

205 Foundations of Education

4 credits. A study of some of the historical, philosophical, sociological, and psychological foundations of education. *Prerequisite:* Psychology 105. Prof. Fox.

Note: Admission to the Teacher Education Program is a prerequisite to any other education course.

215 Introduction to Secondary Education

3 credits. Introduces perspective secondary teachers through a historical, philosophical, psychological, sociological and legal perspective to the development of secondary education and to major issues of multicultural/multiethnic, bilingual, mainstreaming, sexism, student rights, teachers' roles and rights, government and control, and the "excellence" movements in Education. *Prerequisite: Psychology 105.* Prof. Fox.

225 Child Development

4 credits. Study of development from birth to age eleven and of educational implications of developmental theories. A weekly field experience allows for the application of observation techniques and child development knowledge. *Prerequisite: Psychology 105.* Prof. Benelli.

226 Media and Practicum

1 credit. *Instruction in media*, with a pre-school or elementary classroom experience. *Corequisite: Education 235, 255.* Prof. Bowers.

227 Media and Practicum

2 credits. *Instruction and application of media*, including computers, with a pre-school or elementary classroom experience. *Corequisite: Education 225, 235, 255, 256, 365.* Prof. Bowers.

235 Fundamentals of Reading Instruction

3 credits. The systematic assessment and teaching of the basic reading skills: word recognition, word analysis, and comprehension skills. *Prerequisite: Education 205; corequisite: Education 226, Education 255.*

255 Children's Literature

3 credits. A study of representative works from the field of children's literature. (*Corequisite: Education 226 and Education 235.*) Prof. Rice.

305 Practicum in Secondary Education

4 credits. The instructional methodology of an academic discipline is integrated with in-school experience under the guidance of a clinical professor in the academic major: biology, chemistry, physics, general science, or social studies. *Prerequisite: Psychology 105; corequisite: Education 308.* Secondary Clinical Professors.

308 Media and Practicum

1 credit. *Instruction in media*, with a secondary school classroom experience. *Corequisite: Education 305.* Prof. Bowers.

309 Media and Practicum

1 credit. *Instruction and application of media*, with a secondary school classroom experience. *Corequisite: Education 415.* Prof. Bowers.

310 History of Science

1 credit. A study of developments in science from the ancient Greeks to the twentieth century. *Prerequisite: permission of instructor.* Prof. Hoffman.

315 Early Childhood Education

4 credits. A study of programs for young children with regard to theoretical base, curricular goals, teacher role, physical environment, and program sponsorship. On-campus study is coordinated with experiences of observing and analyzing a variety of early childhood programs. *Prerequisites: Education 225, Education 235, Education 255.* Fall semester. Prof. Benelli.

320 Special Methods in Early Childhood Education

4 credits. A study of developmentally appropriate procedures and materials for the preschool child, emphasizing the importance of play in early childhood programs. On-campus study is coordinated with a practicum in a preschool classroom. *Prerequisite: Education 315; corequisites: Education 325, 335, 356, 365.* Spring semester. Prof. Benelli.

325 Science for Early Childhood/Science for Elementary Education

3 and 3 credits, respectively. A study of science concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); 315 (early childhood); corequisite: Education 227.* Prof. Bauman.

335 Mathematics for Early Childhood/ Mathematics for Elementary Education

3 and 3 credits, respectively. A study of mathematics concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); Education 315 (early childhood); corequisite: Education 227.* Prof. Bauman.

355 Language Arts and Communication for Elementary Education

3 credits. A study of concepts, procedures and materials for language arts, including listening and writing for the elementary child. *Prerequisite: Education 235; corequisite: Education 227.* Staff.

356 Language Arts and Reading for Early Childhood/ for Elementary Education

3 and 3 credits, respectively. A study of concepts, procedures, and materials for language arts and reading for the elementary child. *Prerequisite: Education 235; corequisite: Education 227.*

365 Social Studies for Early Childhood/ Social Studies for Elementary Education

3 and 4 credits, respectively. A study of social studies concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); 315 (early childhood); corequisite: Education 227.* Prof. Fox.

371-380 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite: permission of instructor.*

415 Topics in Secondary Education: Reading

2 credits. *Theory and practice of secondary education*, with emphasis on developmental reading and reading in the content area. *Prerequisite: Education 305; corequisite: Education 309.* Prof. Orlando.

471 Professional Internship, Early Childhood

16 credits. Student teaching in an early childhood classroom. *Prerequisites: Education 320, 325, 335, 356, 365.* Prof. Orlando.

472 Professional Internship, Elementary Education

16 credits. Student teaching in an elementary classroom. *Prerequisites: Education 325, 335, 355, 356, 365.* Prof. Orlando.

473 Professional Internship, Secondary

14 credits. Student teaching in a secondary classroom. *Prerequisite: Education 305; corequisite: Education 309, 415.* Prof. Orlando.

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

490-498 Special Topics

Variable credit. Courses designed to give students opportunity to pursue work in an area of major interest in such topics as art in the elementary school, creativity, computers in education, children's literature, developmental reading, learning disabilities, gifted and talented education.

Department of English

Professors Campbell (*Chair*), Dwyer
Associate Professors Rohrkemper, Sarracino
Assistant Professors Deal, Martin, Mead

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary studies is the fundamental aim of the General Education courses and of the rigorous and comprehensive concentrations which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The English major requires 42 hours, including the 6 hours specified as literature area Core.

The literature concentration requires English 105, 301, 363, 394; one course in literary forms (all English courses with middle digit 1); three courses in literary movements (all English courses with middle digit 2); one course in individual authors (all English courses with middle digit 3);

two courses in American Literature (all English courses with middle digit 4); and an additional 9 hours of electives in English (excluding English 101 and 102).

The professional writing concentration requires English 105, 185, 301, 393; Communications 215; Computer Science 120; one English course with middle digit 1; two English courses with middle digit 2; one English course with middle digit 3; one English course with middle digit 4; and 12 hours in writing electives to be selected from English and Communication writing courses: English courses with middle digit 8 (no more than two courses from English 285A/B/C/D) and Communications 311, 314 (no more than one course and not necessarily either).

The secondary education concentration requires English 102, 105, 185, 301, 306; one English course with middle digit 1; one English course with middle digit 2; one English course with middle digit 3; two English courses with middle digit 4; one English course from 381, 382, 383; an additional 9 hours of electives in English (excluding English 101); Psychology 105; and Education 215, 305, 308, 309, 415, 473.

The Department of English offers a *minor* consisting of 24 hours (including 6 in literature from the Core) and distributed as follows: English 105, 185; one course with the middle digit 1, one course with the middle digit 2, one course with the middle digit 3, and one course with the middle digit 4; and two courses from the remainder of the Department's offerings (excluding English 101, 102, 306). Students must apply for acceptance to the minor no later than the beginning of their junior year (at the completion of 60 credits).

101 Basic Writing (Developmental Studies 101)

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. No credit granted if taken after successful completion of English 102. Staff.

102 Expository Writing

3 credits. A course allowing students to experience writing as a complex process involving early stages of writing, such as probing a subject and generating ideas, to planning, redrafting, and editing. Usually operates in a workshop format with students producing a portfolio of writing samples. Staff.

105 Introduction to Literature

3 credits. (Core) A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature, and to provide the necessary background for upper-level literature courses. Readings are drawn from major authors such as Homer and Shakespeare. Prerequisite: to all literature courses. *Prerequisite: English 102 or exemption from it.* Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisite: permission of the instructor.* Prof. Rohrkemper.

285A/B/C/D Writing in the Professions

3 credits. A study of the range of writing and research typically produced in specific professional areas so that students gain a sense of the constraints that govern their style, content, and audience. Staff.

285A Writing for Science and Technology

285B Writing in the Health Professions

285C Writing in the Social Sciences

285D Writing for Government and the Judicial Systems

301 History of the English Language

3 credits. A combination of a history of language and an introduction to linguistics related to literature, stylistics, and composing. Prof. Martin.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and the Learning Center. *Prerequisite to professional semester.* Prof. O'Donnell.

311 Autobiography

3 credits. A critical study of this literary form of non-fiction writing and instruction in writing autobiographically. Professional writing majors may fulfill either literature or upper-level writing requirement. *Prerequisite: English 105.* Prof. Deal.

312 English Drama Before 1900

3 credits. (Core) A study of representative English plays, excluding Shakespeare, from the Middle Ages to the twentieth century, emphasizing Elizabethan and Jacobean drama. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Martin.

313 Modern Drama

3 credits. (Core) A study of drama from the realism of Ibsen through naturalism, expressionism, and symbolism to the current avant garde theatre. *Prerequisite: English 105.* Spring semester. Prof. Campbell.

314 The English Novel Before 1900

3 credits. (Core) A study of selected masterpieces from Defoe to Hardy as works of prose art and as turning points in the development of the form. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Campbell.

317 Modern Novel

3 credits. (Core) A study of the work of major novelists of the twentieth century with emphasis upon the development of the novel as an art form. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Rohrkemper.

318 Modern Poetry

3 credits. (Core) A study of at least five major twentieth-century poets as well as selections from writers who have published within the last thirty years. *Prerequisite: English 105.* Spring semester. Prof. Dwyer.

319 The Fantastic in Literature

3 credits. (Core) A study of major works of fantasy (*Alice in Wonderland*, *The Hobbit*, *The Golden Key*, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic." *Prerequisite: English 105.* Fall semester, alternate years. Prof. Sarracino.

320 Concepts of the Renaissance

3 credits. (Core) A study of the "ruling ideas" of the Renaissance in Britain; representative nondramatic writers with an emphasis on Spenser and lyric poetry. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Martin.

322 The Seventeenth Century

3 credits. (Core) A study of the major nondramatic writers, excluding Milton, from 1600 to 1660: among them, Donne, Jonson, Herbert, and selected prose writers. *Prerequisite: English 105.* Spring semester, alternate years. Prof. Martin.

323 The Restoration and Eighteenth Century

3 credits. (Core) A study of poetry and prose from 1660 to 1800, with an emphasis on Dryden, Swift, Pope, Sterne, and Johnson. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Dwyer.

327 The Romantic Movement

3 credits. (Core) A study of selected poetry and prose most significantly embodying the central concepts and achievements of English Romanticism. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Dwyer.

328 The Victorian Period

3 credits. (Core) A study of selected poetry and prose from Tennyson to Hardy, particularly emphasizing the changing response of the artist to the conflicts stemming from the industrialization of the period. *Prerequisite: English 105.* Spring semester, alternate years. Prof. Sarracino.

329 Modern British Literature

3 credits. (Core) A study of poetry and prose from the end of the nineteenth century to the middle of the twentieth, with an emphasis on the development of a modern aesthetic in the works of such writers as Conrad, Yeats, Joyce, Lawrence, Woolf, and Auden. *Prerequisite: English 105.* Fall semester, alternate years. Prof. Rohrkemper.

331 Chaucer

3 credits. (Core) A study of representative works of Chaucer. *Prerequisite: English 105.* Spring semester, alternate years. Profs. Campbell, Martin.

332 Shakespeare

3 credits. (Core) A study of representative works of Shakespeare. *Prerequisite: English 105.* Spring semester, Prof. Campbell.

333 Milton

3 credits. (Core) A study of representative works of Milton. *Prerequisite:* English 105. Spring semester, alternate years. Prof. Martin.

337 Eighteenth-Century English Authors

3 credits. (Core) A study of representative works of one or two major authors such as Pope, Swift, Fielding, and Goldsmith. *Prerequisite:* English 105. Spring semester, alternate years. Prof. Dwyer.

338 Nineteenth-Century English Authors

3 credits. (Core) A study of representative works of one or two major authors such as Blake, Keats, Dickens, and Hardy. *Prerequisite:* English 105. Fall semester, alternate years. Prof. Campbell.

340 The American Romantic Movement

3 credits. (Core) A study of American Transcendentalism, including its sources, and of major figures of the period such as Hawthorne, Melville, Whitman, Emerson, and Thoreau. *Prerequisite:* English 105. Alternate years. Prof. Sarracino.

341 The Rise of Realism in American Literature

3 credits. (Core) A study of American literature in the late nineteenth and early twentieth centuries, with emphasis on such writers as Dickinson, Clemens, Robinson, Frost, Dreiser, and Fitzgerald. *Prerequisite:* English 105. Spring semester, alternate years. Prof. Sarracino.

342 Experimentalism in American Literature

3 credits. (Core) A survey of major American writers of the twentieth century, authors such as Pound, Eliot, Faulkner, Williams, Stevens, Stein, and Hemingway. *Prerequisite:* English 105. Fall semester, alternate years. Prof. Rohrkemper.

343 American Authors

3 credits. (Core) A study of the writings of one or two American authors such as Melville, James, Whitman, and Faulkner. *Prerequisite:* English 105. Spring semester, alternate years. Profs. Rohrkemper and Sarracino.

351 Analysis of Poems

3 credits. (Core) Intensive training in reading the individual poem accurately and sensitively. *Prerequisite:* English 105. Alternate years. Staff.

357 Women and Literature

3 credits. (Core) A study of the effects on women writers and readers of a male dominated literary tradition. *Prerequisite:* English 105. Alternate years. Prof. Deal.

363 Literary History of Great Britain

3 credits. A study complementing the period-course requirement for literature-concentration students and conveying the relationships of historical literary movements. *Prerequisite:* three upper level courses in literature. Alternate years. Staff.

370–379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/faculty interest. *Prerequisite:* English 105. Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite:* permission of instructor. Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentations of technical information. *Prerequisite:* permission of instructor. Staff.

383 Managerial Communication

3 credits. A course emphasizing the concerns of administrative writers and including instruction in oral and graphic communication of business information. *Prerequisite:* permission of instructor.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course instructing students in advanced writing and professional editing. *Prerequisite:* English 185. Fall semester. Staff.

385 Writing for Publication

3 credits. Advanced study of copy editing and of techniques for promoting one's own manuscripts. Staff.

393 Senior Writing Seminar

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisite:* Professional Writing Concentration or permission of instructor. Alternate years. Staff.

394 Senior Seminar in Literary Criticism

3 credits. A seminar for literature majors on the history of literary criticism, including research techniques. *Prerequisites:* English 105; permission of instructor for nonmajors. Fall semester, alternate years. Prof. Dwyer.

470–479 Internships

1–3 credits. One- or two-credit internships may be requested in either a student's junior or senior year in an on- or near-campus assignment. Three-credit internships are for students proven competent in one- or two-credit internships or judged as having special aptitudes for the specific internship. See the Department Chair for information. Staff.

480–489 Independent Studies in English

2–3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education: English

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite:* Psychology 105; *corequisite:* Education 308, 309. Prof. Callenbach.

Department of Fine and Performing Arts

Professors Harrison (*Chair*), Kitchen, Libhart
Associate Professors Douglas, Simmers, Stites
Assistant Professors Kiser, Rohrbacher
Instructor Friedly

Bachelor of Arts; Bachelor of Science

The department offers three majors leading to the degrees of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, and Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theatre. Minors in Art and Music are offered.

Visual Art

The academic and the practical courses in the art program are offered to help students refine their creative potential and expand their judgment of the visual arts. Studio courses in three-dimensional media are offered.

Minor in Art. The minor in Visual Art requires Art 105, Art 155, either Art 106 or Art 220, either Art 203 or Art 324, and six hours of electives in visual arts courses. Communications 215 may be taken as one of the electives.

105 Drawing

3 credits. (Core) Studio practice in basic drawing media for sketching and rendering both live and inanimate subjects. Prof. Friedly.

106 Ceramics I

3 credits. (Core) An introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

155 Introduction to Art

3 credits. (Core) Experience with selected works by major and minor artists of the modern epoch, as a means of recognizing and evaluating artistic style. Prof. Libhart.

203 20th Century American Art

3 credits. (Core) An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. Studio easel painting in opaque media, with stress on pictorial organization and application of color theories. *Prerequisite:* Art 105 or permission of the instructor. Staff.

206 Ceramics II

3 credits. An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite:* Art 106. Prof. Friedly.

220 Sculpture

3 credits. (Core) An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and instruction in the use of the sculptor's materials and techniques. Prof. Friedly.

324 American Arts/Crafts

3 credits. (Core) Comprehensive scan of U.S. arts, observing their derivation from social, ethnic, and aesthetic influences. Prof. Libhart.

351 Printmaking

3 credits. Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite:* Art 105 or the permission of the instructor. Prof. Friedly.

Dance

DA 101 Interpretive Movement (Same as Physical Education 290)

1 credit. (Core) Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Staff.

DA 102 Introduction to Ballet (Same as Physical Education 295)

1 credit. (Core) Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Staff.

Music

The music courses are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained at the department office.

The department has adopted requirements for junior standing for music majors. A copy of these requirements is available in the department office.

The music education major requires Music 101, 102, 103, 104, 105, 201, 202, 203, 204, 231, 234, 237, 301, 311, 312, 321, 322, 343, 415 or 417, 440, 441, 442, 471, a minimum of twelve hours of applied music instruction, a minimum of eight credit hours in ensemble participation, a senior recital, and either Education 205 or 215.

The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 101, 102, 103, 104, 105, 141, 151, 201, 202, 203, 204, 231, 234, 237, 252, 301, 311, 321, 343, 353, 354, 415 or 417, 440, 441, 442, 455, 456, 473, 474, 475, 476, 477, 478, 479, three hours of music elective, a minimum of twelve semester hours in applied music instruction, a senior recital, and a minimum of six hours credit in ensemble. A six-month internship in an approved clinical facility is required for the music therapy degree. This internship is taken after the completion of the four-year music therapy major.

The music therapy major is approved by the National Association for Music Therapy and the National Association of Schools of Music.

In order to graduate as a music therapy or music education major, a student must maintain the following standards:

(1) A *music therapy major* must earn a grade of C- or better in all music and music therapy courses. A *music education major* must earn a grade of C- or better in all music and music education courses, and in Education 205 or 215.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicum and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

The Bachelor of Arts in Music normally requires Music 101, 102, 103, 104, 105, 201, 202, 203, 204, 321, 322, 415 or 417, 419, 440, 441, 442, twelve semester hours credit in applied music, a senior recital, and three hours of ensemble credit. The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental advisor, each Bachelor of Arts music major works out a program which includes at least 40 hours of music courses.

The minor in music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The minor in music requires Music 101-103; 102-104; 105; 415 or 417 or 441 or 442; four semesters of instruction in one applied music area; minimum of two credits of music ensemble participation; a minimum of three credits of music electives; and attendance at Repertoire Class (Music 100) for four semesters.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to precollege students, adults, and college students who desire to take instruction without credit. Instruction is available from qualified instructors and departmental faculty. Interested persons should contact the director of the Preparatory Division.

100 Repertoire Class

0 credit. This class provides performance opportunities for students in applied music. It meets for 1/2 hour each week and is required for all music majors and minors who are enrolled for applied music instruction.

101 Music Theory

2 credits. (Core) Fundamentals of music theory, harmony, and form, with emphasis on scales, keys, modes, and notation. Fall semester. Prof. Douglas.

102 Music Theory

2 credits. (Core) A continuation of Music 101, with an introduction to nonharmonic tones and seventh chords. Includes binary and ternary forms plus elementary keyboard harmony. *Prerequisites:* Music 101, Music 103; permission of instructor. Spring semester. Prof. Douglas.

103 Fundamentals of Sight-Singing and Ear-Training

1 credit. Development of visual, aural, and basic keyboard skills related to the theoretical and analytical materials covered in Music 101. *Corequisite:* Music 101. Prof. Rohrbacher.

104 Sight-Singing and Ear-Training

1 credit. A continuation of 103. *Prerequisite:* Music 103 or permission of instructor. (Students who fail Music 104 are not permitted to enroll in advanced music theory, Music 201.) Spring semester. Prof. Rohrbacher.

105 Introduction to Music Literature

3 credits. (Core) Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Douglas, Harrison, Stites.

111 Voice Class

1 credit. (Core) Study of the fundamentals of breath control; tone production, and development of vocal technique. Open to all students. Prof. Simmers.

113 Piano Class

1 credit. (Core) Designed to develop basic piano skills and knowledge of music fundamentals. Daily practice required. Not open to music majors. Credit for Music 113 given only upon completion of Music 114. Fall semester. Prof. Beck.

114 Piano Class

1 credit. (Core) A continuation of Music 113. *Prerequisite: Music 113.* Spring semester. Prof. Beck.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite: permission of instructor for nonmajors.* Prof. Ronning-Seyler.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. Prof. Englar.

120 Guitar Class

1 credit. (Core) A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite: Music 119 or permission of instructor.* Prof. Englar.

141 Recreational Music

1 credit. The use of recreational instruments, materials and techniques with handicapped persons. *Prerequisite: music major or permission of instructor.* Spring semester. Staff.

150 Music Therapy Seminar

0 credit. This weekly seminar offers music therapy majors a forum for sharing problems, successful procedures and plans for clinical experiences. Invited guests often make presentations. Required of all music therapy majors each semester. Prof. Rohrbacher.

151 Introduction to Music Therapy

3 credits. A survey of music therapy through lecture-demonstration sessions, reading, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Rohrbacher.

201 Advanced Music Theory

2 credits. Advanced harmony including seventh chords, chromatic harmony, and form and analysis. 18th century Counterpoint is introduced. *Prerequisite: Music 102, Music 104.* Fall semester. Prof. Douglas.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on 19th and 20th century harmonic practice. Includes compositions using 18th century contrapuntal techniques. *Prerequisite: Music 201, Music 203.* Spring semester. Prof. Douglas.

203 Advanced Sight-Singing and Ear-Training

1 credit. Continued emphasis on reading and dictation skills. Fall semester. Prof. Rohrbacher.

204 Advanced Sight-Singing and Ear-Training

1 credit. A continuation of Music 203. *Prerequisite: Music 203 or permission of instructor; corequisite: Music 202.* Spring semester. Prof. Rohrbacher.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. Fall semester. Prof. Douglas.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. Spring semester. Prof. Luckenbill.

235 History of Jazz

3 credits. (Core) Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, viola, violoncello, and double bass. Fall semester. Prof. Leithmann.

238 Intermediate String Class

1 credit. A continuation of 237 dealing with the study of cello and double bass. *Prerequisite: Music 237.* Spring semester. Prof. Leithmann. (The department reserves the right to offer the class as private lessons if fewer than three students are enrolled.)

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202–204, 269.* Fall semester. Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Course provides students with opportunities to develop their knowledge of basic theory, and skills in singing and song leading, conducting, playing classroom instruments, listening and rhythmic activities, and teaching music lesson plans, as well as to observe classroom music instruction. Offered each semester. Prof. Stites.

311 Music in the Elementary School

3 credits. Thorough study of objectives, methods, and materials for elementary school music programs through singing, instrumental, rhythmic, creative, and listening activities. Detailed study and use of recent school music songbook series. Observations and laboratory experience included. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Stites.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experience included. *Prerequisite: music major or permission of the instructor.* Spring semester. Prof. Kitchen.

321 Instrumental-Choral Conducting Fundamentals

3 credits. Instruction in the fundamentals of conducting. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Kitchen.

322 Instrumental-Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Prof. Simmers.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and an introduction to string ensemble techniques, methods, and literature. *Prerequisite: Music 238.* Fall semester. Prof. Leithmann. (The department reserves the right to offer this course as private lessons if fewer than three students are enrolled.)

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. Fall semester. Prof. Hall.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite:* Music 343. Spring semester. Prof. Hall.

353 Techniques in Therapy

2 credits. Behavioral research techniques and how they apply to the uses of music in the therapeutic setting. Students examine the role music has in altering social and academic behavior in therapeutic applications and in life as a whole. *Prerequisite:* Music 252. Fall semester. Prof. Rohrbacher.

354 Research Methods

2 credits. An introduction to the methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. *Prerequisite:* Psychology 105. Fall semester. Prof. Ellsworth.

371–380 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

415 Classical-Romantic Music Literature

2 credits. (Core) Survey of instrumental and vocal music of the Classical and Romantic periods. *Prerequisite:* Music 105 or permission of instructor. Fall semester. Prof. Stites.

417 Twentieth Century Music Literature

2 credits. (Core) Survey of music from Impressionism to the present avant-garde styles. *Prerequisite:* Music 105 or permission of instructor. Spring semester. Prof. Harrison.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisite or corequisite:* Music 202. Spring semester. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. Credit for Music 431 is given only upon completion of Music 432. *Prerequisites:* two semesters of Music 269. Offered with sufficient enrollment. Prof. Ronning-Seyler.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite:* Music 431. Prof. Ronning-Seyler.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. Spring semester. *Prerequisites:* Music 202 and 204. Prof. Kitchen.

441 History of Music

3 credits. Survey course from antiquity to the Baroque era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite:* Music 202 or permission of instructor. Fall semester. Prof. Harrison.

442 History of Music

3 credits. Survey course from the Baroque through the Contemporary era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite:* Music 202 or permission of instructor. Spring semester. Prof. Harrison.

455 Music in Therapy I: Principles

3 credits. Survey of experimental studies dealing with the effects of music on behavior, the intervention of music in therapy, and basic therapeutic approaches and techniques. *Prerequisites:* Music 252, 353, 354; or permission of instructor. Fall semester. Prof. Beck.

456 Music in Therapy II: Practices

3 credits. Therapeutic approaches and techniques in music therapy. *Prerequisite:* Music 455 or permission of instructor. Spring semester. Prof. Beck.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite:* permission of Department. Prof. Kitchen.

473–78 Clinical Experiences I–VI: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. Minimum of thirty hours total for each clinical experience. Music therapy majors only. *Prerequisites:* Music 141, 151. Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite:* permission of instructor. Prof. Rohrbacher.

481–490 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, or research under faculty supervision. *Prerequisite:* permission of instructor. Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department chair for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Nonmusic majors with no piano background or limited background may enroll in Piano Class (Music 113, 114). Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles. Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; they may repeat the ensembles for credit which they apply to the fine arts Core requirement. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director. Ensembles are graded P/NP.

268 Voice

1 credit. (Core) Profs. Roth, Simmers, Stites.

269 Piano

1 credit. (Core) Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Ronning-Seyler.

270 Organ

1 credit. (Core) Prof. Schroeder.

271 Violin

1 credit. (Core) Prof. Leithmann.

272 Viola

1 credit. (Core) Prof. Leithmann.

273 Cello

1 credit. (Core) Prof. Leithmann.

274 String Bass

1 credit. (Core) Prof. Leithmann.

275 Guitar

1 credit. (Core) Prof. Englar.

276 Flute

1 credit. (Core) Prof. Kirkpatrick.

277 Clarinet

1 credit. (Core) Profs. Hall, Kitchen.

278 Oboe

1 credit. (Core) Staff.

279 Bassoon

1 credit. (Core) Staff.

280 Saxophone

1 credit. (Core) Profs. Hall, Kitchen.

281 Trumpet/Cornet

1 credit. (Core) Prof. Douglas.

282 French Horn

1 credit. (Core) Prof. Douglas.

283 Trombone

1 credit. (Core) Prof. Douglas.

284 Baritone/Euphonium

1 credit. (Core) Prof. Douglas.

285 Tuba

1 credit. (Core) Prof. Moore.

286 Percussion

1 credit. (Core) Prof. Luckenbill.

360 Chamber Music

½ credit. (Core) General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Collegians (men's choir), Piano Trio, and Piano Ensemble will be formed as need arises.

361 Concert Choir

1 credit. (Core) Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Simmers.

362 Choral Union

½ credit. (Core) Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. Stites.

365 Orchestra

1 credit. (Core) Performs two or three major concerts during the academic year which constitute an invaluable part of musical training in literature and technique of performance. *Prerequisite for winds and percussion: permission of instructor.* Prof. Leithmann.

368 Jazz Band

½ credit. (Core) The Elizabethtown College Jazz Band serves as an integral part of the College curriculum. Its program of music includes swing, pop tunes, ballads, and jazz, including old standards and current progressive jazz. Prof. Rudolph.

369 Concert Band

1 credit. (Core) Open to any qualified student; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

105 Introduction to Theatre

3 credits. (Core) Introduction to the various interrelated arts and disciplines that make up theatre performance and production, such as acting, playwriting, directing, and scene design. Emphasis is on history, literature, and theory, with support from a textbook, audio-visual aids, analysis of scripts, and possibly one or more field trips. Spring semester. Prof. Kiser.

255 Stagecraft and Lighting

3 credits. (Core) Examination and application of theatre staging, design, and lighting. Topics include scenery design and construction, execution of technical effects, and theatre safety. Fall and Spring semester. Prof. Kiser.

265 Basic Acting

3 credits. (Core) Theory and practice of the art and craft of the stage actor. Skills are developed in voice, body involvement, script analysis, style and theory. Students participate in projects requiring the memorization, creation, and presentation of scenes. Fall semester. Prof. Kiser.

French

See Department of Modern Languages, page 38.

German

See Department of Modern Languages, page 38.

Department of History

Professors K. Kreider, Mumford (*Chair*), Ritsch, Vassady, Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 105 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts in History as a history major and receive certification in the social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

For a *minor in history*, the student must successfully complete 18 hours of course work, composed of the following courses: History 105, 201, 202, and three additional history courses. Students with specific career or personal interests are encouraged to discuss these with the department chair.

105 Topics in the History of Western Civilization

3 credits. (Core) A highly selective approach to the long-range developments and to the major problems of our Western heritage. Staff.

201 History of the United States to 1877

3 credits. (Core) A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the earliest colonial settlements through the end of post-Civil War Reconstruction — roughly 1877. Fall semester. Profs. Mumford, Winpenny.

202 History of the United States since 1877

3 credits. (Core) A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the beginning of Reconstruction—roughly 1865—through the present. Spring semester. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. (Core) A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

215 English History to 1603

3 credits. (Core) Medieval England from the Anglo-Saxons to Queen Elizabeth I, with emphasis on the constitutional and legal foundations, and the role of the Church. Fall semester. Prof. Poole.

216 English History since 1603

3 credits. (Core) Modern Britain since James I, with emphasis on the evolution of the parliamentary form of government and Britain's role as a world power. Spring semester. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. (Core) Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Fall semester, alternate years. Prof. Kreider.

218 Europe in the Twentieth Century

3 credits. (Core) An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Spring semester, alternate years. Prof. Kreider.

306 Recent History of the United States

3 credits. (Core) An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. (Core) The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

308 Technology and American Society

3 credits. (Core) The impact of technology on the development of American society, and also the extent to which American values have shaped the technology. Focus is primarily on the 19th and 20th centuries—from the Age of Steam to the Space Age. Prof. Winpenny.

310 American Ethnic History

3 credits. (Core) A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. (Core) The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. (Core) Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

319 History of Tsarist Russia

3 credits. (Core) The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Fall semester. Prof. Kreider.

320 History of Soviet Union

3 credits. (Core) A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Spring semester. Prof. Kreider.

321 History of Non-Violence

3 credits. (Core) An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. Kreider.

323 History of China

3 credits. (Core) A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

324 History of Japan

3 credits. (Core) A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

327 History of Africa

3 credits. (Core) A survey of African history and culture using an interdisciplinary approach, with emphasis on the history of the politics, cultures, arts, and societies of the African people. Prof. Vassady.

328 Modern Africa

3 credits. (Core) Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330–339 Studies in United States History

3 credits for each course. (Core) An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340–349 Minorities in United States History

3 credits for each course. (Core) An incisive view of minorities in a society venerating majoritarian rule: for example, Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff.

370–379 Special Topics

3 credits. (Core) Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. (Core) The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. (Core) A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Staff.

406 Social and Intellectual History of the United States

3 credits. (Core) An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Staff.

411 Greek and Roman History

3 credits. (Core) Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. By special arrangement. Staff.

412 Medieval History

3 credits. (Core) Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. By special arrangement. Staff.

480–489 Independent Study

Variable credit. (Core) Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites:* approval of the department chair and the Provost, permission of instructor. Staff.

498–499 History Seminar

3 credits. (Core) A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell, D. Koontz, Shubert (*Chair*)
Associate Professors R. Dolan, J. Koontz, Morse
Assistant Professor Polin

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

These courses also satisfy the General Education Core requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers six concentrations. The *pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The *general mathematics concentration* is for those who want the flexibility to design their own programs in mathematics.

For the nonmathematics major, the department offers a choice of two minors: *in statistics* and *in mathematics*. Each is developed on a common foundation of twelve hours of calculus and three hours of linear algebra. The *minor in statistics* is designed to provide training specifically in this field, while the *minor in mathematics* allows the student the flexibility of course selection.

In addition to Mathematics 121, 122, 222, and 201, the minor requirements are as follows:

For *statistics*, Mathematics 151, 351, and either 252 or 352.

For *mathematics*, three courses above Mathematics 212.

All mathematics majors are required to take a minimum of 42 hours in mathematics courses, including Mathematics 121, 122, 151, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 212).

The *pure mathematics concentration* requires Mathematics 301, 421, 422, and three courses from other acceptable mathematics electives.

The *secondary education concentration* (required for secondary education certification) requires Mathematics 301, 341, 351, 421, and two courses from other acceptable mathematics electives. In addition, Psychology 105; Education 215, 305, 308, 309, 415, 473.

The *actuarial science concentration* requires Mathematics 351, 352, 453, 362, and 331. In addition, Accounting 105, 106; Economics 101, 102. Also

required is the passing of at least one examination of the Society of Actuaries by December of the senior year.

The *statistics concentration* requires Mathematics 252, 351, 352, 453, 331.

The *computer science concentration* requires Mathematics 303, 362, and three other acceptable mathematics electives, at least one of which must be 352 or 422; Computer Science 122, 221, 222, and one other 300- or 400-level computer science course except 321. (These computer courses also fulfill the modern language or computer skills requirement.)

The *general mathematics concentration* requires five acceptable mathematics electives, at least one of which must be 352 or 422.

011 Intermediate Algebra (Developmental Studies 011)

2 credits. The fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101 and 117. Credits do not count toward the 128 required for graduation. Fall semester. Staff.

101 Precalculus Mathematics

4 credits. (Core) Precalculus study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency)*. Fall semester. Staff.

117 Concepts of Calculus

4 credits. (Core) Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency)*. Staff.

121 Calculus I

4 credits. (Core) The basic concepts and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency)*. Staff.

122 Calculus II

4 credits. (Core) A continuation of 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry, sequences and series are also included. *Prerequisite: Mathematics 121*. Staff.

131 Finite Mathematics

3 credits. (Core) A study of various noncalculus topics, such as set theory, logic, probability, matrices, linear programming, and Markov chains. Applications are drawn from the biological and social sciences. *Prerequisite: Mathematics 151*. Spring semester. Staff.

151 Probability and Statistics

3 credits. (Core) The basic principles of probability, distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and methodology, and their relation to everyday life. Staff.

201 Linear Algebra

3 credits. (Core) A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, eigenvectors and linear transformations. *Prerequisite: Mathematics 121*. Prof. J. Koontz.

211 Concepts in Modern Mathematics I

3 credits. (Core) An introduction for prospective elementary teachers to some of the concepts and applications of modern mathematics. Includes such topics as sets and functions, problem solving, critical thinking, logic, measurement, introduction to computers, numeration systems, and number theory. Meets core requirements only for elementary and early childhood education majors. Prof. R. Dolan.

212 Concepts in Modern Mathematics II

3 credits. (Core) A continuation of MA211 for prospective elementary teachers. Topics include the structure of number systems, geometry, geometry of measurement, coordinate geometry, three dimensional geometry, metric system, and an introduction to probability and statistics. Meets core requirements only for elementary and early childhood education majors. Prof. Shubert.

222 Calculus III

4 credits. A continuation of 122, completing the basic topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. (Core) Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. *Prerequisite: Mathematics 151.* Fall semester. Prof. Shubert.

252 Statistical Methods

3 credits. (Core) A continuation of material presented in 151. Statistical techniques are presented for solving a variety of problems arising in business, the social, physical and life sciences. Topics include simple and multiple regression, model building, analysis of count data, nonparametric statistics, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Algebraic Structures

3 credits. A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201.* Fall semester, even-numbered years. Prof. Morse.

303 Applied Algebra

3 credits. A study of abstract algebra, stressing set-relation systems with specific attention to their applications in computer science and combinatorics, rather than the binary operation systems studied in MA 301. Topics include sets, binary relations, set functions, partial ordering, Boolean algebras, finite state machines, groups, computer logic and modular arithmetic. *Prerequisites: Mathematics 201, 231.* Spring semester, odd-numbered years. Prof. Morse.

321 Differential Equations

3 credits. A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods of solutions are included. *Prerequisite: Mathematics 222.* Spring semester. Prof. Shubert.

324 Mathematical Models and Applications

3 credits. Survey of a number of mathematical topics and a variety of models in the social and life sciences. An introduction to the modeling process including problem identification, model construction, identification and collection of data, model validation, and calculation of solutions of the model. Problems provide motivation for the development of tools and techniques employed throughout applied mathematics: probability, theory, matrix algebra, optimization, and linear programming. Each student will be required to present a paper. *Prerequisites: Mathematics 201, 222.* Spring semester, even-numbered years. Prof. Morse.

331 Operations Research

3 credits. A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, integer programming, dynamic processing, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: Mathematics 151, 201; Computer Science 121.* Fall semester. Prof. Shubert.

341 Modern Geometry

3 credits. (Core) The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall semester, odd-numbered years. Prof. R. Dolan.

351 Mathematical Statistics I

3 credits. A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's t, Snedecor's F, and normal distributions. *Prerequisite: Mathematics 222.* Fall semester. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. A continuation of 351. A study of principles of statistical in-

ference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 201, 351.* Spring semester. Prof. Blaisdell.

362 Numerical Analysis

3 credits. A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in engineering and the sciences. Topics include solutions of equations in one variable, numerical differentiation and integration, polynomial approximation, solution of linear systems, and numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; Computer Science 121.* Spring semester, odd-numbered years. Prof. R. Dolan.

370-379 Special Topics in Mathematics

Variable Credit. Directed study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, series of real numbers, limits and metric spaces, and continuity. *Prerequisites: Mathematics 201, 222.* Fall semester, odd-numbered years. Prof. D. Koontz.

422 Real Analysis II

3 credits. A continuation of 421, including such topics as integration, differentiation, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring semester, even-numbered years. Prof. D. Koontz.

453 Time Series Analysis

3 credits. A study of the theory and application of statistical methodology pertaining to the modeling of time series. Time domain ARIMA models are emphasized, and extensive use is made of statistical analysis software. *Prerequisite: Mathematics 352.* Spring semester, odd-numbered years. Prof. Blaisdell.

480-489 Independent Study

Variable credit. Staff.

Education 305 Practicum in Secondary Education:

4 credits. *Prerequisite: Psychology 105; corequisite: Education 308.* Fall semester, even-numbered years. Prof. R. Dolan.

Department of Modern Languages

Associate Professors Daiga, Goodling
Assistant Professors Barnada, Trachte (*Chair*)

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture. The pragmatic virtues of a usable skill are joined with the humanistic values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by completing 30 credit hours in one language above 112. A minimum of 9 hours above 112 must be taken in residence at Elizabethtown College. Language majors are required to par-

ticipate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are encouraged to participate in the Brethren College Abroad program.

Department majors must complete the following courses: in residence – Modern Language 211, 212, and 311; 323 or a 370 course, and a three-credit independent study project (481–490); in the Brethren Colleges Abroad Program – Advanced Conversation and Composition, Phonetics, French/German/Spanish History, and History of (French/German/Spanish) Literature. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are a minimum of 12 credits above Modern Language 112 in the following courses: Modern Language 211, 212, 311, 312, 323 or a 370 course, if offered. The internship, Modern Language 318, is optional. After completing the required course work, students must take the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

A placement test is administered free of charge during the first week of classes and in spring semester, prior to fall registration. It may be taken at any other time during the academic year for the general college fee of \$25. All students with more than one year of language preparation must take the placement test before registering in language courses for academic credit.

***111 Fundamentals of Language and Culture (French, German, Russian, Spanish)**

5 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and sociocultural awareness. Emphasis on culture-based documents and collateral laboratory assignments. Fall semester.

112 Fundamentals of Language and Culture (French, German, Russian, Spanish)

5 credits. (Core) Continuation of 111 with expansion of structures, contexts and cultural topics. Completes bachelor of arts language requirement. *Prerequisite: 111 or placement by examination.* Fr 112 and Sp 112 are offered in the fall and spring semester; Ge 112, Spring semester.

***211 Oral Expression (French, German, Spanish)**

3 credits. Emphasizes expanded functional proficiency, with particular attention to the speaking and listening skills. A functional-notional syllabus allows for progression through essential language functions presented in a variety of culturally authentic contexts. Students study selected contemporary texts to provide a frame for their discussions and to review grammatical structures. *Prerequisite: Modern Language 112 or permission of instructor.* Fall semester.

***212 Textual Analysis and Composition (French, German, Spanish)**

3 credits. Presented as a writing workshop, stressing the skills needed for good writing. Students are actively involved in frequent writing and text editing. They study advanced grammatical structures and analyze selected prose texts and articles in the foreign language. A continued emphasis on correct oral expression is made. *Prerequisite: Modern Language 211 or permission of instructor.* Spring semester.

***311 Makings of Modern Society (French, German, Spanish)**

3 credits. Analysis of important contemporary cultural phenomena and issues which have shaped and continue to shape the modern nation. Courses are organized around a theme which may vary from year to year. Readings are taken from literary, sociological and political sources. Films, slides, and audio and videotapes supplement written materials. *Prerequisite: Modern Languages 212 or permission of instructor.* Fall semester.

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: French 211 or permission of instructor.* Spring semester.

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Spanish 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a *B+* average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. (Core) Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres.

371–380 Special Topics (French, German, Spanish, Russian*)

3 credits. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability. *Prerequisite: Modern Language 212 or permission of instructor.*

(*Russian courses are offered if there is sufficient interest. Course 371 provides a reading knowledge in the language.)

481–490 Independent Readings (French, German, Spanish)

3 credits. For senior language majors. Independent projects in some area of language or literature. Project may fulfill literature Core requirement, provided topic relates to literature in the foreign language and not to the language itself.

Department of Occupational Therapy

Associate Professors Jones (*Chair*), Petersen
Assistant Professor Kelly
Instructor Farley

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy was initially accredited in 1976 by the American Occupational Therapy Association and the American Medical Association.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 402, 405, 407, 409, 410, 412, 421, 499; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; and Mathematics 151 and 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Field Work Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of field work education. Students

are responsible for their transportation and travel costs to and from assigned clerkship and field work centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II field work experience in the event these are not provided by the affiliated hospital or clinic.

The student may select either of the following options with faculty approval:

First Option: The student may complete three years of academic work followed by three months of Level-II field work experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II field work the next summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II field work experience.

Additional Field Work Education

After completing the required six months of Level-II field work, the student may elect to complete additional Level-II field work. This study may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education.

Related Expenses

Additional expenses for the occupational therapy student normally include transportation to field work sites, insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association at the reduced student rates.

Degree

Elizabethtown College awards the B.S. degree to students who successfully complete the 128 credit hours of academic preparation.

National Certification Examination

Upon being awarded the bachelor's degree in occupational therapy and successful completion of Level-II field work, the student is eligible to sit for the national certification examination, held twice a year, usually in July and January. The examination is conducted by the American Occupational Therapy Certification Board (AOTCB) which is responsible for awarding certification and the designation Occupational Therapist Registered (OTR).

Admission Requirements for the Department

1. Prior To Admission Into The Department:

- The student must submit an application to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. Transfers are permitted at the sophomore level only, on a space-available basis.
- The student has an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- Students are selected by the Occupational Therapy faculty. The selection process includes consideration of rank in class in high school, SAT scores, interview, and knowledge of occupational therapy.
- The names of students selected for the next academic year are submitted to the Director of Admissions.
- The Department of Occupational Therapy requires that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a problem (physical or emotional) arise which the Department feels may jeopardize the student's participation in the program.

2. Evaluation After Admission Into The Department:

- Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:
 - Have at least a 2.5 average in all courses required for the major (both occupational therapy and related requirements) at the end of the sophomore year.
 - Obtain grades of at least C or better in OT 303, 316, 402 and 405.
 - Satisfactorily meet the standards and requirements in all phases of field work education including Level-I field work, laboratory, and Level-II field work experience.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for non-majors.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for non-majors.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected activities, fine motor and product oriented as well as games and gross motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy. Emphasis on normal movement and patterns of movement including body mechanics, grasp and gait analysis. *Prerequisites: Biology 20I; and permission of instructor for non-majors.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, collage, and blockprinting. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth Through Adolescence

3 credits. An examination of normal human development along the birth-through-adolescence segment of the developmental continuum. Emphasis is on sensorimotor development and occupational behaviors in the areas of exploration, play, self-care, educational, leisure, prevocational and social performance. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification

of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and Occupational Therapy 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: OT 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. The course format includes lecture, seminar, laboratory and Level I Fieldwork Experience. *Corequisite: Occupational Therapy 305, Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies, and professional reporting are coordinated with Level-I Fieldwork experience, lecture, laboratory, and seminar. *Prerequisites: Psychology 105, Occupational Therapy 223, 224. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester.

370–379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor.*

398 Level II Fieldwork – Psychosocial Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of psychosocial rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum score on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook. *Prerequisites:*

All 100-, 200- and 300-level Occupational Therapy courses. Occupational Therapy majors only. Summer term.

402 Gerontic Occupational Therapy

2 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as gerontic occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Occupational Therapy majors only.* Spring semester only.

405 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approach used to enhance the function of individuals with major physical disabilities. Lecture, laboratory, seminar, and Level-I Fieldwork experience. *Prerequisite: Occupational Therapy 218; Corequisite: CPR certification. Occupational Therapy majors only.* Fall semester.

407 Physical Pathology

2 credits. Lectures relative to etiology, prognosis and treatment and major pediatric diagnoses of other general medical conditions. *Permission of the instructor for non-majors.* Fall semester.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. *Prerequisites: Mathematics 151, 252 suggested. Permission of the instructor for non-majors.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the management, supervisory functions of administering an occupational therapy department, in traditional and non-traditional settings. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, program evaluation, and legal and ethical issues. *Occupational Therapy majors only.* Spring semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. *Prerequisite: Occupational Therapy 409. Occupational Therapy majors only.* Spring semester.

419 Prevocational Activities

1 credit. A study of the principles and techniques used in the vocational assessment of selected patients with potential for employment. Prerequisite activity courses are the foundation for discussion and laboratory experiences. *Occupational Therapy majors only.* Fall semester.

420 Sensory Integration

1 credit. Introduction to study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only.* Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite: Biology 201. Occupational Therapy majors only.* Fall semester.

422 Kinesiology II

2 credits. Advanced principles of movement, including the influence of cultural, psychological, and physiological factors. Use of movement in the evaluation and habilitation/rehabilitation of individuals with dysfunction. *Occupational Therapy majors only.* Spring semester.

480 Independent Study/Research

Variable credit. Taken in conjunction with Occupational Therapy 412 Senior Practicum; for students who desire to participate in developing and implementing a data based research project to be conducted either on campus or at a nearby clinical facility.

481–488 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

489 Independent Study in Level II Fieldwork

No credit. Variable length of Level II Fieldwork experience in area of student's interest. Arranged on an availability basis. *Prerequisites: Occupational Therapy 398 and Occupational Therapy 498. Occupational Therapy majors only.* Fall semester.

498 Level II Fieldwork – Physical Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of physical rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum score on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook. *Prerequisites: All academic course work and Occupational Therapy 398. Occupational Therapy majors only.* Summer or fall semester.

499 Senior Seminar

1 credit. A culmination and synthesis of the major courses. Course enables students to discuss current issues in the profession and relate academic and clinical experiences in preparation for the final clinical FW II and in preparation for sitting the certification examination. Content will vary according to the issues presented. A variety of faculty will be involved along with outside discussants. *Occupational Therapy majors only.* Spring semester.

Department of Philosophy

Professors Spiegler, Sutphin (*Chair*)
Assistant Professor Matteo

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A *major in philosophy* requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. The following seven courses are required: Philosophy 105, 110, 115, 201, 240, 310, and 490, the Senior Thesis. In addition, the student must elect two from the following: Philosophy 302, 313, 320. The remaining three hours may be taken from any of the other offerings in the department.

A *minor in philosophy* requires six courses in Philosophy, with the following distribution: Philosophy 105, 110, 115, 201, and either 240 or 310. An additional three hours must be selected from the following: Philosophy 240, 302, 310, 313, or 320.

105 Introduction to Philosophy

3 credits. (Core) An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Prof. Sutphin.

110 Logic and Critical Thinking

3 credits. (Core) A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and truth. The nature of inference from premises to conclusion, rules for deductive and inductive process; informal inferences and fallacies, and theory of definition. Prof. Sutphin.

115 Ethics

3 credits. (Core) A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo. (Students will not receive credit for both Philosophy 115 and Religion 215.)

170–79 Special Topics in Philosophy

3 credits. Courses of an experimental nature offered at the Freshman and Sophomore level. Staff.

201 Ancient and Medieval Philosophy

3 credits. (Core) An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. (Core) An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Prof. Sutphin.

240 Modern Philosophy

3 credits. (Core) A study of enduring issues in the writings of the 17th and 18th century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. (Core) A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. (Core) The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Spiegler.

310 Contemporary Philosophy

3 credits. (Core) A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Prof. Sutphin.

313 Philosophy of Science

3 credits. (Core) An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Prof. Sutphin.

320 Philosophy of Religion

3 credits. (Core) A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Prof. Sutphin.

370–79 Special Topics in Philosophy

3 credits. (Core) A constantly changing specialized study within the field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480–89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Department of Physical Education and Health

Associate Professor Ober (*Chair and Athletic Director*)

Assistant Professors Kauffman, Whitmore

Staff: Mehrens, Roderick

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social and moral standards, such as sportsmanship, teamwork, tolerance and other character traits which come from properly conducted play.

All students are required to take four semester hours of physical education courses, of which two may be taken in aquatics. Students must take at least one semester of an aquatics activity or successfully complete a proficiency test in swimming, which must be taken no later than the fall of the sophomore year. This test may be taken only once. A transfer student who desires to take the test must do so at the beginning of his or her first semester.

The remaining physical education requirements may be satisfied by electing any of the courses offered, except Physical Education 285. No more than six semester hours of physical education may be counted toward the 128 hours required for graduation. Physical Education 270 counts as three credits towards graduation, but only as one activity towards meeting the Core requirements.

105 Beginning Swimming (women)

1 credit. (Core) Elementary-level instruction in the basic strokes for non-swimmers.

115 Intermediate Swimming (women)

1 credit. (Core) Instruction in the techniques of the basic strokes, survival swimming, and water safety.

125 Beginning Swimming (men)

1 credit. (Core) Elementary-level instruction in the basic strokes for non-swimmers.

135 Intermediate Swimming (men)

1 credit. (Core) Instruction in the techniques of the basic strokes, survival swimming, and water safety.

145 Field Hockey-Volleyball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

150 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

155 Tennis-Bowling (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

160 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

165 Golf-Badminton (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

185 Basketball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

190 Horsemanship

1 credit. (Core) Basic riding positions, body balance, equine safety. Discuss equine behavior, care, tack, styles and management. Graded pass/no pass.

191 Advanced Horsemanship

1 credit. (Core) Continues at student level of progress. Concentration on a specific area, i.e., dressage, jumping, or training a young or green horse. Graded pass/no pass.

192 Gymnastics

1 credit. (Core) A developmental approach to increasing flexibility, strength in beginning gymnastic skills. Manual resistance strength training, spotting and teaching techniques. Graded pass/no pass.

193 Self Defense

1 credit. (Core) Provides tools to live a safe life without fear. Hands on activities for defense are included. Graded pass/no pass.

194 Skiing

1 credit. (Core) Instruction at the individual's level of skill, after screening. Includes basic safety and slope time. Graded pass/no pass.

195 Soccer

1 credit. (Core) Rules, playing techniques, and skill development.

205 Archery-Badminton (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

210 Basketball (men)

1 credit. (Core) Rules, playing techniques, and skill development. Spring semester.

217 Advanced Life Saving

1 credit. (Core) Instruction and practice in life-saving, water safety, and pool management. Meets Red Cross certification requirements. Graded pass/no pass.

218 Water Safety Instruction (coed)

1 credit. (Core) Advanced lifesaving skills, swimming instruction, and use of pool equipment. Meets Red Cross Instructor certification requirements. Graded pass/no pass. *Prerequisite: current Senior Lifesaving Certificate.*

225 Tennis (women)

1 credit. (Core) Rules, playing techniques, and skill development. Fall semester.

235 Tennis (men)

1 credit. (Core) Rules, playing techniques, and skill development. Fall semester.

240 Bowling (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

245 Racquetball (women)

1 credit. (Core) Rules, playing techniques, and skill development.

246 Racquetball (men)

1 credit. (Core) Rules, playing techniques, and skill development.

250 Volleyball (coed)

1 credit. (Core) Rules, playing techniques, and skill development.

255 Handball-Racquetball (men)

1 credit. (Core) Rules, playing techniques, and skill development.

260 Adapted Physical Education

1 credit. (Core) Individual activity or corrective exercises adapted to the needs and abilities of the student. Graded pass/no pass. *Prerequisite: recommendation of a physician.*

265 Physical Conditioning (coed)

1 credit. (Core) Techniques of exercise, jogging, weight training, and body development.

270 Advanced Individual Sports

3 credits. (Only one hour credit counts for Core.) Methods, techniques, and teaching skills in selected sports. Summer session only.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4–12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades. *Required of Elementary Education and Early Childhood Education majors.*

290 Interpretive Movement (Same as Dance 101)

1 credit. (Core) Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Prof. Williams-Henry.

295 Introduction to Ballet (Same as Dance 102)

1 credit. (Core) Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Prof. Williams-Henry.

370–380 Special Topics in Physical Education (coed)

1 credit. (Core) Such physical activity instruction as bicycling for which there may be an extra charge. Graded pass/no pass.

481–490 Self-Directed Physical Education Activity

1 credit. (Core) For the student who attends Evening Division, or studies abroad, or has extenuating circumstances which prohibit the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

Department of Physics and Pre-Engineering

Professor Ranck (*Chair*)
Associate Professor Thompson
Assistant Professors Gaffney, Stuckey

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics and Pre-Engineering are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in contemporary society. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, many of which are intended to develop students' abilities for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in departmental programs commonly go on to careers in physics, engineering, computer technology, and teaching, or to graduate school.

The Department offers four programs: 1) a Bachelor of Science in Physics, 2) a cooperative program in engineering at the completion of which the student is awarded a bachelor of science degree from The Pennsylvania State University and a bachelor of arts degree from Elizabethtown College, 3) two options for secondary education majors: physics or general science with a concentration in physics, and 4) minors in physics and in engineering physics. In addition, students majoring in physics may pursue a premedical program.

Physics majors are required to take Physics 101 or 103, 102 or 104, 202, 204, 221, 241, 301, 302, 351, 352, 361, 362, 421, 422, 461, 462, 491, 492, and two of 423, 424, 471, 472; Chemistry 101, 104; Mathematics 121, 122, 201, 222 and 321; Computer Science 115.

Engineering majors complete three years at Elizabethtown College and two years at The Pennsylvania State University. To be eligible for admission at The Pennsylvania State University, a student must have a 3.0 cumulative average at Elizabethtown College and be recommended by Elizabethtown College. At Elizabethtown College, the student will complete Physics 101, 102, 202, 204, 221, 241, 301, 302, 351, 352, 361, 362; Drawing 115, 116; Mathematics 121, 122, 201, 222, 321; Chemistry 101, 104; Computer Science 115.

Secondary education majors in physics are required to take Physics 101, 102, 202, 204, 221, 241, 351, 361, 362; Chemistry 101, 104; Biology 105, and 106 or 108; Mathematics 121, 122, 201; Computer Science 115; Psychology 105; Education 305, 308, 309, 415, 473; and three additional credits of electives from the offerings of the Department of Physics and Pre-Engineering.

Secondary education majors in general science (physics concentration) should consult the interdisciplinary section of the catalog for a complete description and a listing of required courses.

A minor in physics and a minor in engineering physics are offered. For a minor in **physics**, a student must take Physics 101, 102, 202, 221, and two other Physics courses. For a minor in **engineering physics**, a student must take Physics 101, 102, 202, 241, Drawing 116 and one other Physics course. These minors will allow students majoring in computer science, mathematics, biology, and chemistry to develop a broad-based competency in basic physics. They are also suitable for majors in other departments who enjoy the physical sciences, but who are unable to fit a full physics major program into their schedules. (Students should carefully check the course listings for the prerequisites for each physics course.)

Premedical students may also major in physics. They must meet the requirements for a Bachelor of Science in Physics but with additional courses in biology and chemistry. More details are given in the Premedical and Allied Health Programs listing in the interdisciplinary section.

101 Physics I

4 credits. (Core) Introduction to the basic concepts of mechanics, classical kinematics and dynamics (linear and rotational motion, force and torque, energy), friction, statics, fluids, kinetic theory of matter. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite or Corequisite: Mathematics 121.* Fall semester. Prof. Gaffney.

102 Physics II

4 credits. (Core) A continuation of Physics 101. Introduction to the basic concepts of electricity, magnetism, geometrical optics, interference and diffraction, and brief introductions to relativity, quantum theory, atomic and nuclear physics, and elementary particle physics. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite: Physics 101.* Spring semester. Prof. Gaffney.

111 Classical Physics

4 credits. (Core) Introduction to the concepts and methods of physics through a study of the laws of motion, energy, electricity, light, relativity, radioactivity, and other topics of interest. Hours: lecture 3, laboratory 3. *Prerequisite: High school algebra and trigonometry.* Spring semester. Prof. Stuckey.

112 Astronomy

4 credits. (Core) A study of the structure and evolution of stars, planetary systems, and galaxies, and less familiar astronomical objects such as quasars, pulsars, and black holes. Laboratories provide an opportunity to observe the planets, stars, clusters, and galaxies and some practical experience in determining astrometric quantities. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Spring semester. Prof. Schaeffer.

113 Spacetime Physics

4 credits. (Core) A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114 Cosmology

4 credits. (Core) A study of the origins, evolution, and future of the universe. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra and trigonometry.* Fall semester. Prof. Stuckey.

116 Quantum Theory and Reality

4 credits. (Core) A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Hours: lecture 3, laboratory 2. Spring semester. Prof. Ranck.

202 Physics III

4 credits. (Core) An introduction to special relativity and mathematical methods for physicists and engineers. Special relativity topics include time dilation, length contraction and the energy content of matter. Mathematical techniques involved in describing physical phenomena such as waves and energy transfer are studied. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 221; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Stuckey.

204 Thermodynamics

3 credits. (Core) An introduction to thermodynamics as applied to physical and chemical equilibria in ideal and non-ideal homogenous and heterogeneous systems. Phase changes, kinetics, ionic solutions, and electrochemistry are also treated. *[This course is the same as Chemistry 242.]* Hours: lecture 3. *Prerequisite: Physics 102, Mathematics 122; Prerequisite or corequisite: Chemistry 104 or 114.* Spring semester. Prof. Reeder.

221 Modern Physics

4 credits. (Core) Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. *[This course is the same as Chemistry 343.]* Hours: lecture 3, laboratory 4. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Prof. Rutter.

242 Computer Systems Interfacing

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. *[This course is the same as Computer Science 333.]* Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

301 Mechanics

3 credits. (Core) An intermediate course in mechanics. Newtonian mechanics of systems of particles, central forces, oscillations, collisions, rigid-body dynamics, and the Lagrangian and Hamiltonian formalisms for generalized coordinates. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, 321.* Fall semester. Prof. Gaffney.

302 Electromagnetism

3 credits. (Core) An intermediate course in electromagnetism, including electro- and magnetostatics and dynamics, Maxwell's equations, macroscopic fields, electromagnetic waves, and special relativity. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Prof. Gaffney.

351, 352 Advanced Physics Laboratory I, II

2 credits. Advanced laboratory courses with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. A wide variety of experimental techniques and analyses are used. Individual experimental design is emphasized. Hours: laboratory 6. *Prerequisites: Physics 202, 221, 241.* Fall semester, Spring semester. Prof. Stuckey.

361, 362 Seminar in Physics and Engineering I, II

0.5 credits. A weekly presentation and discussion by students and faculty of topics of current interest in physics, earth science, and engineering. Hours: seminar 1. Fall semester, Spring semester. Staff.

421 Quantum Physics

3 credits. (Core) A systematic development of quantum mechanics including the Schrodinger, Heisenberg, and Dirac formalisms and their interpretations. Topics include the standard solutions to the classical model problems of quantum mechanics, perturbation theory, scattering theory. Hours: lecture 3. *Prerequisites: Physics 221, 301, 302, Mathematics 201, 321.* Fall semester. Staff.

422 Statistical Physics

3 credits. (Core) The thermodynamics and statistical mechanics of physical systems based on the principle of maximum entropy. Topics include the ideal gas, Fermi-Dirac and Bose-Einstein "gases," electrons in metals, black-

body radiation, and elements of transport theory. Hours: lecture 3. *Prerequisite: Physics 421.* Spring semester. Staff.

423 General Relativity

3 credits. (Core) The theory of general relativity, including the Schwarzschild and Kerr-Newman black holes, the Robertson-Walker cosmology, weak fields and gravity waves. Hours: lecture 3. *Prerequisites: Mathematics 321, Physics 221 and 302 or permission of the instructor.* Fall semester, alternate years. Staff.

424 Condensed Matter Physics

3 credits. (Core) The application of quantum theory to the study of solids. Topics include Bloch's theorem, the reciprocal lattice, phonons, electronic states, transport and optical properties, the Fermi surface, and elements of superconductivity. Hours: lecture 3. *Prerequisite: Physics 421 or permission of the instructor.* Spring semester, alternate years. Staff.

461, 462 Seminar in Physics III, IV

0.5 credits. A weekly presentation and discussion by students and faculty of topics of current interest in physics, earth science, and engineering. Hours: seminar 1. Fall semester, Spring semester. Staff.

471, 472 Topics in Physics

3 credits. (Core) Topics in physics not covered in other courses. Hours: lecture 3. *Prerequisite: Permission of the instructor.* Alternating Fall and Spring semesters. Staff.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of the instructor.* Staff.

491, 492 Research in Physics I, II

2 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of the instructor.* Fall semester, Spring semester. Staff.

DR 115 Graphics and Descriptive Geometry I

2 credits. Study of engineering-related drawing, including constructions, lettering, orthographic projection, sketching, dimensioning, and pictorial drawing. Hours: lecture 1, laboratory 5. Fall semester. Prof. Frey.

DR 116 Graphics and Descriptive Geometry II

3 credits. A continuation of Drawing 115. Topics include spatial relationships of points, lines and planes, intersections of objects, developments, cartography, vectors, graphs. Instruction and practical exercises are given in computer aided drafting (CAD). Hours: lecture 1, laboratory 7. *Prerequisite: Drawing 115.* Spring semester. Prof. Frey.

Earth Science

ES 105 Field Earth Science

8 credits. (Core) An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite: Permission of the instructor.* Summer session. Prof. Thompson.

ES 111 The Dynamic Earth

4 credits. (Core) An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity and geological time. Hours: lecture 3, laboratory 2. Fall semester, Spring semester. Prof. Thompson.

ES 112 The Geology of Landscape

4 credits. (Core) The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. Fall semester. Prof. Thompson.

ES 115 Meteorology

4 credits. (Core) General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Laboratories include collection and analysis of weather and climatic data, use of special charts and maps, and establishment of physical principles through experiment. Hours: lecture 3, laboratory 2. Fall and spring semesters. Prof. Thompson.

ES 370–379 Special Topics in Earth Science

Variable credits. (Core) Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite:* Permission of the instructor. Prof. Thompson.

ES 481–489 Independent Study in Earth Science

Variable credits. (Core) Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite:* Permission of the instructor. Prof. Thompson.

Department of Political Science

Professor Gottfried, Selcher (*Chair*)

Associate Professors McClellan, McDonald

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessman. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 117, 118, 202, 205, 301, 308, and 330, and twelve credits of political science electives. In addition, Mathematics 151 and Sociology 331 are required. General electives from the other social sciences are encouraged.

For a *minor in political science*, the student must successfully complete 21 hours of course work, composed of the following political science courses: 117, 118, 202, 205, and 301 or 308, and two elective 300/400-level courses. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/public relations: Political Science 323, 333 (Mass Media and American Politics); (2) law/paralegal/criminal justice: Political Science 329, 401; (3) international affairs: Political Science 305, 327, 342, 413; (4) political theory: Political Science 329, 382; (5) public administration: Political Science 471; and (6) business administration: Political Science 334 (Government and Business).

Students majoring in political science may elect a *concentration in public administration*. This includes Political Science 117 or 301; 308 and 471; Business Administration 370 (Decision-Making in the Public Sector); Economics 101; and Sociology 360. Students not majoring in political science may choose a *minor in public administration*, and should consult the interdisciplinary section of this catalog for further information.

The Department participates in *the secondary school certification in social studies program* and *the forestry and environmental management major*, offering a political science concentration in each. (See the detailed descriptions in the interdisciplinary section of this catalog.)

105 Western Political Heritage

3 credits. (Core) Introduction to the basic terms, concepts, methodologies, and ideas of the tradition of Western political thought with a special emphasis on those ideas which have contributed to the development of the American political order. Prof. McDonald.

117 American National Government

3 credits. (Core) Analysis of the development of the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Prof. McClellan.

118 State and Local Government

3 credits. (Core) Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Spring semester. Prof. McClellan.

202 Political Theory

3 credits. (Core) Analysis of the development of significant political ideas from the Greek city-state to the present. Spring semester. Prof. McDonald.

205 International Relations

3 credits. (Core) Survey of the basic units of analysis, concepts, and principles of global international relations, with emphasis on the formulation and implementation of foreign policy in the context of political, economic, military, and cultural factors. Prof. Selcher.

301 Comparative Governments

3 credits. (Core) A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

305 American Foreign Policy

3 credits. (Core) U.S. foreign relations since World War II, within an integrated analytical approach to identify the characteristic processes of decisionmaking and the patterns of those decisions over the decades. Prof. Selcher.

308 Public Administration

3 credits. (Core) A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. (Core) An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects for nuclear war are among some of the topics examined. Fall semester. Prof. McDonald.

327 Latin American Politics

3 credits. (Core) Political culture and processes, with country studies and development models to illustrate political styles and approaches to current issues. Spring semester. Prof. Selcher.

329 American Political Thought

3 credits. (Core) Historical analysis of major American political thinkers from the Puritans to the present with special consideration given to the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. *Prerequisite:* Mathematics 151. Prof. Kraybill.

333–339 Topics in Public Policy

3 credits. (Core) Detailed examination of topics in policy development and analysis, such as the mass media and American politics (PS 333), and public policies toward business (PS 334) and in such areas as health and education. Prof. McClellan.

342 Politics of Developing Nations

3 credits. (Core) An interdisciplinary analysis of issues of political development, with application to specific case studies of contemporary nation-building in transitional societies. Prof. Selcher.

370–379 Special Topics

3 credits. (Core) Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

382 Modern Ideologies

3 credits. (Core) A survey of Marxism, socialism, anarchism, liberalism and conservatism, and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

401 Constitutional Law

3 credits. (Core) History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Fall semester 1990. Prof. Gliptis.

413 U.S. Security Policy

3 credits. (Core) Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite: Political Science 205 or 305 or permission of instructor.* Spring semester. Prof. McDonald.

471 Capitol Semester Internship

6 credits. Applied field experience in politics and public administration for state or local government agencies, the state legislature, and private political organizations. *Prerequisites: Political Science 308 and permission of instructor.* Spring semester. Prof. McClellan.

480–489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Professor Ellsworth (*Chair*)
Associate Professors Dennis, Eiserer
Assistant Professors Rider, Teske

Bachelor of Arts; Bachelor of Science

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers two degrees: the Bachelor of Arts in Psychology and the Bachelor of Science in Psychology. These degrees differ in their General Education Core requirements. The department offers a minor in psychology and offers a concentration for students pursuing the secondary education certification in social studies (see the interdisciplinary section of this catalog).

Courses required for both the *bachelor of arts* and the *bachelor of science* degrees are Psychology 105, 106, 213, 218, 222, 317, 321, 402, 413 or 414, 425 or 435, and psychology electives for a total of 36 credit hours. For the *bachelor of science* degree, the student is required to complete three credit hours of computer science.

Courses required for *the minor* are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/400) courses. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

105 General Psychology

3 credits. (Core) An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. (Core) The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105.* Spring semester. Prof. Ellsworth.

201 Addictions

1 credit. The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite: Psychology 105 or permission of the instructor.* Prof. Overdurf.

213 Research Methods

4 credits. (Core) The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105.* Fall semester. Prof. Ellsworth.

218 Psychological Statistics

3 credits. Statistics in psychology, including percentiles, standard scores, t-tests, analysis of variance, correlation, regression and prediction, Chi square and selected other procedures. Emphasizes statistical reasoning, as well as application to psychological contexts. Spring semester. *Prerequisite: Psychology 213.* Prof. Eiserer.

222 Physiological Psychology

3 credits. (Core) Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite: Psychology 105.* Spring semester. Prof. Eiserer.

225 Developmental Psychology

3 credits. (Core) Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite: Psychology 105.* Prof. Rider.

235 Social Psychology

3 credits. (Core) The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as conformity, prejudice, aggression, pro-social behavior, attraction, and love. *Prerequisite: Psychology 105.* Prof. Teske.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester.

317 Learning

4 credits. (Core) Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 213.* Fall semester. Prof. Eiserer.

321 Theories of Personality

3 credits. (Core) A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite: Psychology 105.* Fall semester. Prof. Teske.

322 Abnormal Psychology

3 credits. (Core) A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite: Psychology 105.* Spring semester. Prof. Dennis.

334 Exceptional Children and Youth

3 credits. (Core) A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite:* Psychology 225 or permission of instructor. Spring semester. Prof. Rider.

370-379 Special Topics

Variable credit. (Core) Study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite:* permission of instructor. Staff.

401 Counseling Psychology

3 credits. (Core) An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counsee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites:* Psychology 105 and permission of instructor. Fall semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. (Core) A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite:* Psychology 105. Fall semester. Prof. Dennis.

413 Perception

3 credits. (Core) A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of instructor. Spring semester, 1991. Prof. Eiserer.

414 Memory and Thinking

3 credits. (Core) A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of instructor. Spring semester, 1990. Prof. Ellsworth.

425 Advanced Development Psychology

3 credits. (Core) A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project. *Prerequisites:* Psychology 213, 225, and junior standing, or permission of instructor. Fall semester, 1989. Prof. Rider.

435 Advanced Social Psychology

3 credits. (Core) A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites:* Psychology 213 and 235 or permission of instructor. Fall semester, 1990. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites:* Psychology 105 and permission of instructor. Prof. Dennis.

480-489 Independent Study in Psychology

Variable credit. (Core) This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite:* permission of instructor. Staff.

491-492 Research Practicum

Variable credit. (Core) Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites:* Psychology 213 and permission of instructor. Staff.

Department of Religious Studies

Professors Clemens, Dumbaugh, Puffenberger (*Chair*)

Assistant Professors: Bucher, B. Hostetler

The Department of Religious Studies seeks to broaden the student's liberal education by pursuing creative ventures which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a complex and pluralistic religious milieu. Because of this diversity, the study of religion includes a variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religious Studies major is designed to serve as a pre-professional foundation for those students wishing to pursue study beyond the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields). One's major is to be planned in consultation with the department faculty and chair in order to assure a balanced blend of courses in several subject areas.

A *major* in Religious Studies consists of twelve courses (36 hours). This total includes the two required religion-philosophy General Education Core course requirements and the three-hour Senior Research Project/Thesis. One's program of study must include at least one course from each of the following four categories: biblical studies, ethics and theology, comparative religions, and peace studies.

A *minor* in Religious Studies consists of eight courses (24 hours); this total includes the two required religion-philosophy General Education Core courses requirements. One's course selection must include at least three of the above listed categories.

101 Introduction to the Hebrew Bible

3 credits. (Core) A study of the literature of the Hebrew Bible, with emphasis on the Pentateuchal and historical narratives and the wisdom books of Job and Ecclesiastes, using the tools of historical, literary, and social analysis. Prof. Bucher.

102 Introduction to the New Testament

3 credits. (Core) A study of the literature of the New Testament and the historical development of the first-century Church, using the tools of historical, literary, and social analysis. Prof. Bucher.

105 Forms of Religious Experience

3 credits. (Core) A survey of the basic categories needed for an understanding of religious phenomena. Attention given both to formal expressions and substantive experiencing, with emphasis upon mystical intuition. Myth, symbol, and imagery is of special interest. Prof. Clemens.

165 Introduction to Peace and Conflict Resolution

3 credits. (Core) The foundation course in the peace studies minor. Introduces the main topics. Investigates causes of conflict and alternate modes of resolution, including mediation. Of special value to the service professions. Prof. Clemens.

170–179 Special Topics in Religion

3 credits. (Core) Courses of an experimental nature offered occasionally at the freshman-sophomore level. Includes such topics as: The Social World of Ancient Israel, The Social World of Early Christianity, etc. Staff.

201 Ancient Near Eastern Religions

3 credits. (Core) Introduces the major religious traditions of the Ancient Near East: the religions of the Sumerians, Babylonians, Assyrians, Canaanites, Israelites, and Egyptians. It examines the theology, worldview, and religious practices of each of these traditions. Prof. Bucher.

202 Archaeology and the Bible

3 credits. (Core) Introduces the basic principles, techniques, and theoretical assumptions of archaeology as practiced in the Middle East. Surveys the major archaeological discoveries that have shed light on the Bible and biblical history. *Prerequisite: permission of the instructor.* Prof. Bucher.

205 Contemporary Religious Issues

3 credits. (Core) A survey of relevant problems and issues on the contemporary American religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism in America. Staff.

215 Social Ethics

3 credits. (Core) The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens.

221 Western Religions

3 credits. (Core) An introduction to the major religious traditions of the near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. (Core) An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shintoism. Prof. Puffenberger.

225 Anabaptist and Pietist Movements

3 credits. (Core) A study of the European historical and theological backgrounds of the Anabaptist and Pietist movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Prof. Durnbaugh.

230 Religion in America

3 credits. (Core) Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, as well as the identity and integrity of each separate tradition. Prof. Clemens.

255 Business Ethics

3 credits. (Core) A critical analysis of contemporary ethical dilemmas and decision-making processes in the field of American business. Utilizes normative ethical theory, Kohlberg's model of moral development, and numerous case studies as a way to clarify competing ethical principles and to evaluate differing ethical judgments. Prof. Puffenberger.

310 Biblical Perspectives on Peace and Justice

3 credits. (Core) An examination of the ways in which the values of peace and justice were understood and practiced in the ancient Israelite and early Christian communities. *Prerequisite: Rel 101 or 102 or permission of the instructor.* Prof. Bucher.

315 Issues in Death and Dying

3 credits. (Core) A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. Presupposes the notion that the best preparation for life is an in-depth study of its non-existence. *Prerequisite: permission of the instructor.* Prof. Puffenberger.

335 Renaissance and Reformation History (History 315)

3 credits. (Core) A study of the Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Durnbaugh.

351 Religion and Violence

3 credits. (Core) A study of the reasons for hatred and war as well as a survey of the tension between patriotism and faith as found in the traditional and quasi-religions of our day. Critically examines the ideas of just war, pacifism, non-violent resistance, etc. Prof. Puffenberger.

355 Bio-Ethics

3 credits. (Core) A critical case-study examination of the ethical problems that arise in the practice of medicine and the pursuit of biological and medical research. Wrestles with the task of determining not only how ethical principles apply, but how to order the principles when not all of them can be followed. Prof. Puffenberger.

357 The Church's Role in Social Change

3 credits. (Core) Combines historical and topical consideration of the church's posture toward the state and social change. An applied section views current tense situations in order to arrive at a tenable position on the church's role. Prof. Clemens.

361 Anabaptist and Pietist Groups to 1850 (Sociology 361)

3 credits. (Core) Introduces the spectrum of groups: Brethren, Mennonites, Amish, Inspirationalists, Moravians, The Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Notes their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival and revolution. Prof. B. Hostetler.

362 Anabaptist and Pietist Groups since 1850 (Sociology 362)

3 credits. (Core) Examines the processes of adaption, schism, and withdrawal in these groups as they respond to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren, and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Prof. B. Hostetler.

363 Pacifism Among Anabaptist and Pietist Groups (Sociology 363)

3 credits. (Core) Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government, the pacifist compromises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to civil rights and justice issues. Probes growing interdenominational and international peace discussions and cooperations in the 1980's. Prof. B. Hostetler.

364 Amish Society (Sociology 364)

3 credits. (Core) An introduction to the history, culture, and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. B. Hostetler.

365 Anabaptist and Pietist Groups in Modern Society (Sociology 365)

3 credits. (Core) Beginning with a review of sociological theory on modernization, this course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience for the Anabaptist and Pietist Studies minor, this seminar's topics and groups will vary from year to year. Prof. Kraybill.

370–379 Special Topics in Religion

3 credits. (Core) Courses offered occasionally on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest within the field of religion. Includes such topics as: Liberation Theology; Evangelical Theology; Civil Religion; Esoteric Religions; Utopian Communities; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; Prophecy and Apocalyptic Thought; Wisdom Literature; Islamic Religious Thought; Eastern Scriptures; Biblical Hebrew; New Testament Greek; Jesus and the Gospel Tradition; Mysticism; etc. Staff.

465 Directed Research Project (for Peace Studies minors)

3 credits. A capstone seminar designed to integrate previous work and produce a major research paper. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religion minors by special request. Staff.

490 Senior Research/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Sociology, Anthropology, and Social Work

Professors J. Hostetler, Kraybill

Associate Professors Lehr (*Chair*), Rosado

Assistant Professors Bergel (*Director of the Social Work Program*),

B. Hostetler, Martin, Wheelersburg

*Bachelor of Arts and Bachelor of Science in Sociology-
Anthropology*

Bachelor of Arts in Social Work

The programs in this department provide for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology and social work go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social work, law, and business administration. Some move directly into careers in personnel work, social research, adult and juvenile probation, private and governmental social welfare agencies, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers two basic majors. The *sociology-anthropology major* leads to either a bachelor of arts or bachelor of science degree and the *social work major* leads to a bachelor of arts degree. The Department also offers a minor in sociology and a concentration in anthropology and Anabaptist and Pietist studies.

The major in sociology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities.

The major in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. Courses and field experiences emphasize the distinctiveness and the similarity of various social service delivery systems. The program is accredited by the Council on Social Work Education.

The department also participates in the secondary education certification in social studies offering sociology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A *sociology-anthropology major* requires Sociology 101, 202, 203, 330, 331, 364, 498 and Anthropology 201, 202, and 360 plus a minimum of two other courses in Sociology, Anthropology, or Anabaptist and Pietist Studies.

The *Anabaptist and Pietist Studies Concentration* (12 hours) requires Sociology 361, 362, 365, and 363 or 364 or 481.

The *Anthropology Concentration* (12 hours) requires Anthropology 211, 306, 308 and one elective Anthropology course.

The *Sociology minor* requires 18 hours of course work including Sociology 101, 202, 203, 330, and 331, and 3 credit hours of sociology electives.

The *Social Work Major* requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. Two reference rating forms completed by persons who know the applicant well, and one completed by the applicant.
3. Formal admittance to Elizabethtown College and to the Social Work Program.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The social work major requires the following courses: Biology 105 and 106 or 108; Sociology 101; Psychology 105, 225; Political Science 117; Economics 101; Mathematics 151; Social Work 151, 233, 240, 275, 330, 367, 368, 369, 398, 401, 470, 471, 498; plus nine credits of professionally related courses directed toward the student's professional goal and approved by the social work advisor. Spanish is the language preferred to meet the core requirement.

Sociology

101 Introduction to Sociology

3 credits. (Core) Basic concepts and theories relating to the study of society with emphasis on fundamental sociological methods and approaches. Staff.

151 Introduction to Social Welfare (Social Work 151)

3 credits. (Core) The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites or corequisites: Sociology 101, Psychology 105.* Spring semester. Staff.

202 Sociological Theory

3 credits. (Core) An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, including structural-functionalism, Marxism and interactionism, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite: Sociology 101.* Staff.

203 Social Organization

3 credits. (Core) A thorough analysis of the culture, structure, and change of contemporary industrial societies. Specific topics include the rational and nonrational bases of industrial society, work and leisure, politics, structured inequality and social movements. *Prerequisite: Sociology 101.* Staff.

215 Criminology

3 credits. (Core) Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Fall semester. Staff.

220 Race and Ethnic Relations

3 credits. (Core) Study of racial and other minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Prof. Rosado.

233 Human Behavior in the Social Environment (Social Work 233)

3 credits. (Core) A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Psychology 225, Sociology 101.* Fall semester. Staff.

237 Group Dynamics

3 credits. (Core) A consideration of empirical research in group dynamics within the larger attempt to integrate a theoretical understanding of group dynamics with its experiential applications to everyday life. Staff.

301 Social Issues

3 credits. (Core) A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Fall semester. Prof. Rosado.

305 Marriage and the Family

3 credits. (Core) A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Fall semester. Staff.

317 Sociology of Religion

3 credits. (Core) An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Fall semester. Prof. Kraybill.

330 Methods of Social Research

(Political Science 330, Social Work 330)

3 credits. (Core) Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisites: Sociology 101, and Mathematics 151.* Fall semester. Prof. Kraybill.

331 Social Statistics

3 credits. (Core) Application of the concepts of Mathematics 151, Probability and Statistics, to particular statistical procedures used in social research and analysis. *Prerequisite: Sociology 330, Political Science 330 or Social Work 330.* Spring semester. Prof. Kraybill.

339 Human Sexuality (Social Work 339)

3 credits. (Core) A study of sociosexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research, and selected issues. Staff.

342 Modern Corrections

3 credits. (Core) An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Spring semester. Staff.

344 Aging: Social Response and Implications (Social Work 344)

3 credits. (Core) An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Spring semester. Staff.

355 Women in Society (Social Work 355)

3 credits. (Core) A sociological inquiry into the current status of women in society. Topics include the socialization process, the relationship between gender and social institutions, and feminist theory and research that explain the roles and status of women. Spring semester. Staff.

358 Sociology of War and Peace

3 credits. (Core) A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Spring semester. Prof. Kraybill.

360 Sociology of Complex Organizations

3 credits. (Core) An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Staff.

361 Anabaptist and Pietist Groups Prior to 1850

3 credits. (Core) Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Prof. B. Hostetler.

362 Anabaptist and Pietist Groups Since 1850

3 credits. (Core) Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Prof. B. Hostetler.

363 Pacifism among Anabaptist and Pietist Groups, 1525–1985

3 credits. (Core) Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker-pacifist government; the pacifist compromises of Moravians while protecting Indian converts; and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth-century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Fall semester. Prof. B. Hostetler.

364 Amish Society

3 credits. (Core) An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Fall semester. Prof. B. Hostetler.

365 Anabaptist and Pietist Groups in Modern Society

3 credits. (Core) Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience, the course will be conducted as a seminar with the topics and groups varying by year. Spring semester. Prof. Kraybill.

366 Addiction and Society (Social Work 366)

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff.

371–380 Special Topics in Sociology

3 credits. (Core) Readings and discussion of topical areas of sociology. Topics may include, but not limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of instructor.* Staff.

481–490 Independent Study in Sociology

Variable credit. (Core) Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. (Core) The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of instructor.* Spring semester. Staff.

Social Work

151 Introduction to Social Welfare (Sociology 151)

3 credits. The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites: Sociology 101, Psychology 105.* Spring semester. Prof. Martin.

220 Race and Ethnic Relations

3 credits. Study of racial and other minorities in the United States and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Staff.

233 Human Behavior in the Social Environment (Sociology 233)

3 credits. A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Sociology 101, Psychology 225.* Fall semester. Staff.

240 Basic Helping Processes

3 credits. Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

275 Rural Social Welfare Systems

3 credits. The development and organization of the rural community; its network of services designed to address community, family, and individual problems; community development and administration of social service programs. *Prerequisite: Social Work 151.* Spring semester. Prof. Bergel.

330 Methods of Social Work Research

(Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or corequisite: Mathematics 151.* Fall semester. Prof. Kraybill.

339 Human Sexuality (Sociology 339)

3 credits. A study of sociosexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Staff.

344 Aging: Social Response and Implications (Sociology 344)

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Staff.

355 Women in Society (Sociology 355)

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Staff.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Prof. Martin.

366 Addiction and Society (Sociology 366)

3 credits. (Core) An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff.

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 240.* Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367.* Spring semester. Staff.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Corequisite: Social Work 368.* Spring semester. Prof. Martin.

371-380 Special Topics in Social Work

3 credits. (Core) Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

398 Urban Social Welfare Systems

3 credits. On-site study of an urban area, with emphasis on social problems and social systems, and on comparisons between urban and small town-rural areas. *Prerequisite: Social Work 275, or permission of instructor.* Summer session after junior year. Prof. Martin.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social, economic, and political systems. *Prerequisites: Social Work 398, Political Science 117, Economics 101.* Fall semester. Prof. Martin.

470 Introductory Field Instruction

3 credits. Supervised field instruction for at least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. Fall semester. Prof. Martin.

471 Advanced Field Instruction

14 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner. *Prerequisite: permission of instructor; corequisite: Social Work 498.* Spring semester. Prof. Martin.

481-490 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite: Social Work 470; corequisite: Social Work 471.* Spring semester. Prof. Bergel.

Anthropology

201 Physical Anthropology

3 credits. (Core) An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. Fall semester. Prof. Lehr.

202 Cultural Anthropology

3 credits. (Core) An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

211 World Cultures

3 credits. (Core) A survey of some of the peoples and cultures of the world from early times to the present with emphasis on physical, cultural, linguistic, and demographic factors. Fall semester. Prof. Lehr.

306 Indians of North America

3 credits. (Core) A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Prof. Lehr.

307 Peoples and Cultures of Africa

3 credits. (Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. (Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. (Core) Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Wheelersburg.

371-380 Special Topics in Anthropology

3 credits. (Core) Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Prof. Lehr.

Spanish

See Department of Modern Languages, page 38.

Theatre

See Department of Fine and Performing Arts, pages 31, 35.

Interdisciplinary Programs

Premedical and Other Health Professions Programs

Martin O.L. Spangler (Chair, Health Professions Advisory Committee)

Members: John A. Campbell, Jr., James L. Dively, Fred Hoffman, Paul Peterson, Frank Polanowski, Zoe Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions schools and/or students. The *biology pre-medical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 16. A second route is the *bachelor of science degree in biochemistry* (see page 22). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students

accepted. During a student's first year at Elizabethtown, he or she will follow a *curriculum similar to that outlined below*, with minor variations depending upon several factors, such as starting level in English and mathematics. After completion of the freshman year, all students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Seven faculty are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with pre-medical students and their major advisors to ensure that all prerequisites are met for entry into colleges of medicine; (2) to advise students on registration and preparation for medical college admissions tests; (3) to assist students in the preparation and submission of applications to medical colleges; (4) to draft a composite letter of evaluation and endorsement for worthy candidates and to forward this information to the appropriate medical college admissions committees; (5) to offer assistance in preparing for medical college interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical college placement for advising and administrative purposes.

The premedical student should introduce himself to the Health Professions Advisory Committee early in his freshman year and formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During March of the junior year, the *Committee* will hold *interviews* with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. During early April the student will again contact the Committee, this time to initiate the process of generating letters of recommendation and endorsement. Students are expected to solicit letters from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical college admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process himself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that pre-medical students notify the Committee of changes in status of their applications so that the Committee can plan for this important stage of the admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Podiatric Medicine.

Representative First-Year Courses

<i>Credits</i>	<i>Fall Semester</i>
4	Biology 111
4	Chemistry 113
3	English*
4	Mathematics 121**
1	Physical Education
<i>Credits</i>	<i>Spring Semester</i>
4	Biology 112
4	Chemistry 114
3	English
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology major, and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University in Philadelphia. After completing 29 credits, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

For further details, contact Dr. Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a bachelor of science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's General Education Core in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the General Education Core requirements and accumulating at least 104 credits before transferring to Duke. The student spends at least two years at Duke's School of Forestry and Environmental Studies. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional year, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews.

There are variations of the schedule herein described. For further details, talk to Mr. Laughlin.

Majors shall complete all General Education Core requirements for the bachelor of science degree. Within the Core areas the following courses should be taken:

Mathematics Core (six hours): Mathematics 117, 151; 101, 121; or 121, 151. If 151 is not taken for Core, it is strongly recommended as an elective.

Science Core (eight hours): Majors with a concentration in biology should take chemistry; majors with concentrations in business or political science should take biology.

Social Science Core (nine hours): three of the nine hours must be in psychology or sociology/anthropology.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313-313L, 321, and two courses from Biology 215-215L, 235, 331, 332, or 347. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111, 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 101, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political 117, 118, 308, 334, 471. Minor concentration recommendations are Political Science 308, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry 113, 114; Physics 101, 102, two courses from Earth Science 111, 112, 115; Mathematics 101-121, or 121-151, Psychology 105; Education 305, 308, 309, 310, 415, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113, 114, 213, 214; and eight hours from among Chemistry 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology 111, 112; two courses from Earth Science 111, 112, 115; Physics 101, 102; Mathematics 101, 121, 122; Psychology 105; Education 305, 308, 309, 310, 415, 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 204, 221, 241; one additional course in physics or drawing; two courses from Biology 105, 106, 108; Chemistry 101, 104; two courses from Earth Science, 111, 112, 115; Mathematics 101, 121, 122; Psychology 105; Education 305, 308, 309, 310, 415, 473.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are:

Students must take one 24-hour major, two nine-hour cognates, and two six-hour cognates. All students must take the professional education sequence: Psychology 105; Education 305, 308, 309, 415, and 473.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics. The nine-hour cognate comprises Economics 101, 102, and three elective hours in economics. The six-hour cognate comprises Economics 101, 102.

History: The 24-hour major must include History 105, 201, 202, 390, one European history course beyond 105; one non-United States, non-European history course; and six elective hours in history. The nine-hour cognate comprises History 105, 201, 202. The six-hour cognate comprises History 105, 202.

Political Science: The 24-hour major must include Political Science 117, 118, 202, 205, 301, either 308, 330, or a 340 topic, and six elective hours in political science. The nine-hour cognate comprises Political Science 117, 118, 205. The six-hour cognate comprises Political Science 117, 118.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 225, 235, 321, 322 and 370. The nine-hour cognate comprises Psychology 105 and six elective hours. The six-hour cognate includes Psychology 105 and three elective hours in psychology.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 202, 203, 330, Anthropology 202, and nine hours planned in consultation with and approved by the social studies advisors in the Departments of Sociology and Education. The nine-hour cognate comprises Sociology 101, 203, and Anthropology 202. The six-hour cognate comprises Sociology 101, Anthropology 202.

Anabaptist and Pietist Studies Minor

The interdisciplinary minor in Anabaptist and Pietist Studies consists of 18 credit hours. The curricular model incorporates three types of courses: a required introductory course (3 hrs.); elective courses in a variety of disciplines (12 hrs.); and a capstone seminar research project (3 hrs.). Courses in the minor may not count toward a student's academic major.

The *introductory course* (Rel 225) is designed to orient students to the European historical and theological roots of the Anabaptist and Pietist movements. The *elective courses*, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which draws on the resources of three academic disciplines. The *capstone course* (Rel/Soc 365) is a seminar experience which requires students to integrate and synthesize the insights from several disciplines in a major research-writing project. At least two faculty from differing academic disciplines will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. *Program advisor:* Dr. William Puffenberger.

Minor Requirements

- A. One *required* introductory course (3 hrs.)
Rel 225 Anabaptist and Pietist Movements
- B. Four *elective* courses from the following list (12 hrs.)
Rel 230 Religion in America
Rel 335/His 315 Renaissance and Reformation History
Rel 361/Soc 361 Anabaptist and Pietist Groups to 1850
Rel 362/Soc 362 Anabaptist and Pietist Groups since 1850
Rel 363/Soc 363 Pacifism Among Anabaptist and Pietist Groups
Rel 364/Soc 364 Amish Society
- C. One *required* capstone research seminar (3 hrs.)
Rel 365/Soc 365 Anabaptist and Pietist Groups in Modern Society

Peace and Conflict Studies Minor

The interdisciplinary minor in Peace and Conflict Studies consists of 18 credit hours. The curricular model incorporates three types of courses: required introductory courses (6 hrs.); elective courses in a variety of disciplines (9 hrs.); and a capstone, integrative seminar research project (3 hrs.). Courses in the minor may not count toward a student's academic major.

In order to provide students with adequate conceptual tools and conciliation skills, the program of study is multi-disciplinary in both method and instruction. The *introductory courses* orient students to basic concepts and approaches in Peace and Conflict Studies as well as the history of nonviolence. The *elective courses*, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which taps the analytic resources of various academic fields. The *capstone course* requires students to synthesize concepts and knowledge from several disciplines in order to address a research problem of practical or theoretical interest. At least two faculty, representing different academic fields, will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. *Program advisor*: Dr. William Puffenberger.

Minor Requirements

- A. Two *required* introductory courses (6 hrs.)
 - Rel 165 Introduction to Peace and Conflict Resolution
 - Hi 321 History of Nonviolence
- B. Three *elective* courses from the list below (9 hrs.). No more than two elective courses shall be chosen from any one department. At least two of the elective courses must be taken outside the student's major department.
 - Com 301 Interpersonal Communication
 - Ps 205 International Relations
 - Ps 305 American Foreign Policy
 - Psy 235 Social Psychology
 - Rel 310 Biblical Perspectives on Peace and Justice
 - Rel 351 Religion and Violence
 - Rel 357 The Church's Role in Social Change
 - Soc 350 Sociology of War and Peace
 - Soc/Rel 363 Pacifism Among Anabaptist and Pietist Groups
- C. A required *capstone* seminar designed to integrate previous work and culminate in a major research paper.
 - Rel 465 Directed Research Project

International Studies Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign culture, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are making themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The Business Department has an international business concentration designed specifically for business majors. Details of this option can be obtained from the Business Department. The structure of the minor for all other majors consists of:

1. **Foreign language competency**: 6 semester hours in oral expression, textual analysis, and composition beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level 1 + on the ACTFL/ETS scale.
2. **Three required foundation courses** (9 hours):
 - An 211 World Cultures
 - Ec 307 International Economics* or
 - Ec 371 Economic Development or
 - Ec 372 International Political Economy
(only one economics course may be selected)
 - PS 205 International Relations
3. **Four elective courses** (12 hours) to be chosen from this list:
 - An 202 Cultural Anthropology
 - An 307 Peoples and Cultures of Africa
 - An 308 Peoples and Cultures of Latin America
 - BA 317 International Marketing
 - BA 371 International Business Management
 - Com 372 International Communications
 - Ec 307 International Economics*
 - Ec 308 Comparative Economic Systems
 - Ec 371 Economic Development
 - Ec 372 International Political Economy
 - Fr/Ge/Sp 311 Making of Modern Society
 - Fr/Ge/Sp 312A Languages for the Professions
 - & 312B
 - Hi 205 Modern Far East
 - Hi 216 English History since 1603 (Modern Britain)
 - Hi 218 Europe in the Twentieth Century
 - Hi 320 History of Soviet Union
 - Hi 323 History of China
 - Hi 324 History of Japan
 - Hi 327 History of Africa
 - Hi 328 Modern Africa
 - Hi 403 A History of United States Foreign Relations
 - PS 301 Comparative Governments
 - PS 305 American Foreign Policy
 - PS 327 Latin American Politics
 - PS 342 Politics of Developing Nations
 - PS 413 United States Security Policy
 - Rel 221 Western Religions
 - Rel 222 Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The director of International Studies (Professor Wayne Selcher) will help the student with course selections. With the exception of courses specifically required for the major (e.g., Political Science 205 for Political Science majors), courses in the minor must be selected from core courses or free electives. Completion of the minor is indicated on a student's transcript.

Public Administration Minor

The public administration minor provides knowledge, skills, and experience to students desiring a career in public service. Combined with an appropriate academic major, the minor prepares students for careers in public management, public policy analysis and administration, legislative affairs, urban and regional planning, international development administration, and related fields. In particular, the minor is designed to provide a necessary background for students who intend to pursue graduate study in public affairs.

The requirements of the minor reflect the interdisciplinary nature of governmental activity. The courses introduce the student to: (1) the political, economic, and organizational environment of the public administrator; and (2) the major activities, responsibilities, and roles of public administrators. An important component of the

minor is participation in the Capital Semester Internship Program (Political Science 471), which furnishes internship opportunities with state and local government agencies.

The minor is available to all students except political science majors, who may elect a concentration in public administration within the major. The required courses in the minor are: Economics 101; Political Science 117 or 301, 308 and 471; Business Administration 370 (Decision-Making in the Public Sector); and Sociology 360. Students interested in working for federal, state, or local governments in the United States should take Political Science 117, while students who want to pursue public-sector work outside the U.S. should take Political Science 301. With the exception of Economics 101, courses in the minor may not count toward a student's academic major. For additional information and assistance, contact Dr. McClellan of the Political Science Department.



Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; L.L.D., Elizabethtown College (1952-1984)

Louise B. Black, *Associate Professor of English Emerita*
B.S., Elizabethtown College; M.S., Temple University (1968-1988)

I.L. Bossler, *Professor of Mathematics Emeritus*
B.S., Ursinus College; M.S., Purdue University (1959-1989)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1945-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Université, University of Paris (1966-1973)

Robert B. Garrett, *Assistant Professor of Health and Physical Education Emeritus*
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967-1988)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

A. F. Kish, *Director of the Adult External Degree Program Emeritus*
B.S., Rutgers University; M.S., University of Delaware (1963-1988)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

J. Henry Long, *Associate Professor of Sociology Emeritus*
B.S., Elizabethtown College; B.D., D.D., Bethany Theological Seminary (1969-1988)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Elisabeth D. Shaw Russell, *Associate Professor of English Emerita*
B.A., M.A., Oxford University (1969-1988)

Reba M. Sebelist, *Assistant Professor of Occupational Therapy Emerita*
B.S., Elizabethtown College; M.S.Ed., University of Pennsylvania, OTR/L, FAOTA (1977-1987)

Carl N. Shull, *Professor of Music Emeritus*
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961-1988)

Donald P. Smith, *Assistant Professor of Physical Education Emeritus*
B.S., University of Mississippi (1954-64, 1972-88)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Robert S. Young, *Director of Special Gifts Emeritus*
(1950-1984)

Robert E. Ziegler, *Professor of Science Education Emeritus*
B.A., Bridgewater College; M.R.E., Bethany Seminary; M.S., Ph.D., University of Wisconsin (1966-1988)

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976); Sabbatical Leave, Spring Semester, 1990.

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965); Sabbatical Leave, Spring Semester, 1990.

James L. Dively, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)

Donald F. Durnbaugh, *Carl W. Zeigler Professor of Religion and History*
B.A., Manchester College; M.A., University of Michigan; Ph.D., University of Pennsylvania (1989)

J. Thomas Dwyer, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)

Delbert W. Ellsworth, *Professor of Psychology* (1988)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)

Charles Fazzi, *Edgar T. Bitting Professor of Accounting* (1988)
B.S., M.B.A., Ph.D., The Pennsylvania State University (1988)

Paul Gottfried, *Visiting College Professor of Humanities* (1989)
A.B., Yeshiva University; M.A., Yale University; Ph.D., Yale University (1989)

John F. Harrison, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)

J. Robert Heckman, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)

Jack L. Hedrick, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963); Sabbatical Leave, Fall Semester, 1989.

Frederic E. Hoffman, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

- John A. Hostetler**, *Distinguished Scholar-in-Residence and Director of the Center for the Study of Anabaptist and Pietist Groups* (1986)
B.A., Goshen College; M.A., Ph.D., Penn State University (1986)
- Otis D. Kitchen**, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)
- Donald E. Koontz**, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)
- Donald B. Kraybill**, *Professor of Sociology* (1984)
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)
- Carroll L. Kreider**, *Professor of Business and Clinical Professor in Business Education* (1989)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)
- J. Kenneth Kreider**, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964); Sabbatical Leave, Academic Year 1989-90.
- Henry M. Libhart**, *Professor of Art* (1972)
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967)
- Robert C. Moore**, *Professor of Communications* (1989)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983)
- Richard L. Mumford**, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)
- Rollin E. Pepper**, *Professor of Biology* (1968)
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964)
- Zoe G. Proctor**, *Professor of Chemistry* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)
- William V. Puffenberger**, *Professor of Religion* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967)
- John P. Ranck**, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)
- D. Paul Rice**, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)
- Wayne A. Selcher**, *Professor of International Studies, and Director of International Studies* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969); Sabbatical Leave, Fall Semester, 1989.
- Ronald L. Shubert**, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)
- Martin O. L. Spangler**, *Professor of Chemistry* (1968)
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966)
- Stanley T. Sutphin**, *Professor of Philosophy* (1970)
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963)
- Bela Vassady, Jr.**, *Horace E. Raffenberger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)
- Thomas R. Winpenny**, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)

Associate Professors

- Stanley K. Bowers**, *Associate Professor of Education* (1973)
B.S., Millersville State College; M.Ed., Temple University (1965)
- Ronald R. Brown**, *Dean of the College and Associate Professor of Psychology* (1989)
B.A., Bishop College; Ph.D., University of Michigan (1989)
- Uldis Daiga**, *Associate Professor of Modern Languages* (1973)
B.S., University of North Carolina; M.A., Temple University (1965)
- Paul M. Dennis**, *Associate Professor of Psychology* (1973)
B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)
- Robert D. Dolan**, *Associate Professor of Mathematics, Clinical Professor in Mathematics Education* (1970)
B.S., California State College; M.A., West Virginia University (1964)
- Darrell R. Douglas**, *Associate Professor of Music* (1972)
B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972)
- Leonard A. Eiserer**, *Associate Professor of Psychology* (1986)
B.A., University of Maine; M.A., Ph.D., Bryn Mawr College (1981)
- Martha A. Eppley**, *Associate Professor of Economics* (1971); *Associate Dean of the Faculty and Registrar* (1979)
B.S., Elizabethtown College; M.B.A., Indiana University (1964)
- Hugh G. Evans, Jr.**, *Associate Professor of Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania State University (1968)
- Boyd Fox**, *Associate Professor of Education* (1973)
B.S., M.S., Ed.D., Utah State University (1970)
- E. Margaret Gabel**, *Assistant to the Director of the Library and Head Cataloguer*
M.S. L.S., Syracuse University
- George A. Gliptis**, *Associate Professor of Business* (1972)
B.S., J.D., University of Virginia (1970)
- Suzanne Schmidt Goodling**, *Associate Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury College (1964)
- Maurice R. Hoppie**, *Associate Professor of Economics* (1987)
B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)
- Jacqueline L. Jones**, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign, OTR/L (1987)
- Leo Kivijarvi**, *Associate Professor of Communications and Director of Television* (1989)
B.A., Southern Connecticut State University; M.A., Illinois State University; Ph.D., Bowling Green State University (1989)
- John E. Koontz**, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)
- Ronald L. Laughlin**, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)
- Thomas R. Leap**, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)
- R. Bruce Lehr**, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)

E. Fletcher McClellan, *Associate Professor of Political Science* (1989)

B.A., Franklin and Marshall College;
M.A., East Tennessee State University;
Ph.D., The University of Tennessee
(1982)

W. Wesley McDonald, *Associate Professor of Political Science* (1986)

B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)

Robert K. Morse, *Associate Professor of Mathematics* (1971)

B.S., Franklin and Marshall College;
M.A., Temple University (1968)

Stanley R. Neyer, *Associate Professor of Business* (1972)

B.S., Elizabethtown College; M.B.A., Shippensburg State College (1964)

D. Kenneth Ober, *Associate Professor of Physical Education, and Director of Athletics* (1972)

B.S., M.S., West Chester State College
(1964)

Lynn S. Orlando, *Associate Professor of Education* (1988)

B.A., Point Park College; M.Ed., Bloomsburg University; Ed.D., The Pennsylvania State University (1988)

Paul Petersen, *Associate Professor of Occupational Therapy* (1988)

B.S., Syracuse University; M.A., New York University; Ph.D., University of Nebraska at Lincoln, OTR/L (1984)

Frank P. Polanowski, *Associate Professor of Biology* (1981)

B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)

H. Marshall Pomroy, *Associate Professor of Business* (1971)

B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)

H. Herbert Poole, Jr., *Associate Professor of History* (1982)

B.A., Franklin and Marshall College;
M.A., University of Pennsylvania;
Ph.D., University of Delaware (1969)

Raymond R. Reeder, *Associate Professor of Chemistry* (1973)

B.S., Case Institute of Technology; Ph.D., Brown University (1969)

John C. Rohrkemper, *Associate Professor of English* (1987)

B.A., M.A., Ph.D., Michigan State University (1981)

Caleb Rosado, *Associate Professor of Sociology* (1989)

B.A., Pacific Union College; B.D., Andrews University; Ph.D., Northwestern University (1989)

Carmine T. Sarracino, *Associate Professor of English* (1984)

B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973);

Sabbatical Leave, Academic Year,
1989-90.

Charles D. Schaeffer, Jr., *A.C. Baugher Associate Professor of Chemistry* (1988)

B.A., Franklin and Marshall College;
Ph.D., State University of New York at Albany (1976)

Harry L. Simmers, *Associate Professor of Music* (1971)

B.S., Bridgewater College; M.M., American Conservatory of Music (1966)

Donald E. Smith, *Associate Professor of Communications* (1973)

B.S., M.S., State University of New York College at Geneseo (1969)

John W. Stites, *Associate Professor of Music* (1976)

B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, *Associate Professor of Business* (1987)

B.A., Lebanon Valley College; M.S., Franklin and Marshall College;
M.B.A., University of Connecticut;
Ph.D., Temple University (1987)

Glenn H. Thompson, Jr., *Associate Professor of Earth Science* (1973)

B.S., Indiana University of Pennsylvania;
M.Ed., Pennsylvania State University
(1969)

Randolph L. Trostle, *Associate Professor of Business* (1984)

B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College;
Ph.D., Lehigh University (1972)

Barbara C. Tulley, *Associate Professor of Computer Science* (1989)

B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)

Assistant Professors

Kurt M. Barnada, *Assistant Professor of Modern Languages* (1988)

B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University. (1988)

David A. Bauman, *Assistant Professor of Education* (1988)

B.A., Goshen College; M.Ed., Millersville University (1988)

Cecelia Benelli, *Assistant Professor of Education* (1985)

B.S., M.Ed., Ph.D., Pennsylvania State University (1985)

Vivian R. Bergel, *Assistant Professor of Social Work and Director of The Social Work Program* (1987)

B.A., M.S.W., West Virginia University (1987)

Cynthia Beyerlein, *Assistant Professor of Business, and Director of the Small Business Center* (1985)

B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)

Christina A. Bucher, *Assistant Professor of Religion* (1988)

A.B., Elizabethtown College; M.A.Th., Bethany Theological Seminary, Ph.D., Claremont Graduate School (1988)

Jamie M. Byrne, *Assistant Professor of Communications* (1988)

B.S., M.S., Murray State University (1988)

Nancy B. Deal, *Assistant Professor of English* (1988)

B.A., Michigan State University; M.A., Emory University; Ph.D., Michigan State University (1988)

J. Sue Dolan, *Assistant Professor of Business and Clinical Professor of Business Education* (1980)

B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

John B. Gaffney, *Assistant Professor of Physics* (1988)

B.A., M.A., Ph.D., Columbia University (1988)

Patricia A. Hill, *Assistant Professor of Business* (1988)

B.A., Gettysburg College; M.B.A., University of Baltimore (1988)

Beulah S. Hostetler, *Assistant Professor of Sociology and Anthropology* (1986)

A.A., Hesston College; B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1986)

Jack Kasar, *Assistant Professor of Occupational Therapy and Clinical Field Supervisor* (1989)

B.A., West Chester University; M.S., Virginia Commonwealth University (1988)

Yvonne E. Kauffman, *Assistant Professor of Physical Education* (1972)

B.S., Bridgewater College; M.Ed., West Chester State College (1966)

Beverly A. Kelly, *Assistant Professor of Occupational Therapy* (1988)

B.S., State University of New York at New Paltz; M.A., New York University, OTR/L (1988)

Edmond L. Kiser, *Assistant Professor of Theatre* (1987)

B.S., University of Science and Arts of Oklahoma; B.A., M.A., University of Akron; Ph.D., Wayne State University (1987)

Link Martin, Jr., *Assistant Professor of Social Work* (1989)

B.S., Murray State University; M.S.W., University of Hawaii (1988)

Louis F. Martin, *Assistant Professor of English* (1988)

B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)

Anthony M. Matteo, *Assistant Professor of Philosophy* (1986)

B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

Dana Gulling Mead, *Assistant Professor of English* (1989)

B.A., M.A., University of Tennessee, Knoxville (1989)

James J. Moyer, *Assistant Professor of Business* (1986)

B.S., Dickinson College; M.Letters, University of Pittsburgh (1986)

Donald G. Muston, *Assistant Professor of Business* (1977)

B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Lawrence W. Polin, *Assistant Professor of Mathematics* (1989)

B.S., St. John's University; Ph.D., State University of New York at Stony Brook. (1989)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)

B.A., Gettysburg College; M.S., Ph.D., Vanderbilt University (1988)

Michael J. Rohrbacher, *Assistant Professor of Music Therapy* (1989)

B.M., East Carolina University; M.S., Johns Hopkins University (1989)

William M. Stuckey, *Assistant Professor of Physics* (1988)

B.S., Wright State University; M.S., Ph.D., University of Cincinnati (1988)

John A. Teske, *Assistant Professor of Psychology* (1986)

B.A., Indiana University; M.A., Ph.D., Clark University (1986)

Sharon R. Trachte, *Assistant Professor of Modern Languages* (1986)

B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)

Hans-Erik Wennberg, *Assistant Professor of Communications and Director of Instructional Services* (1984)

B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Robert P. Wheelersburg, *Assistant Professor of Anthropology, Assistant Dean of the Faculty* (1989)

B.A., Ohio State; A.M., Ph.D., Brown University (1989)

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)

B.A., Bridgewater College (1968)

Instructors

Sharon K. Farley, *Instructor in Occupational Therapy* (1987)

B.S., Elizabethtown College, OTR/L (1987)

Milton Friedly, *Instructor in Art* (1987)

A.A., Northwest Community College; B.F.A., Arizona State University; M.F.A., University of Wyoming (1987)

Adjunct Faculty

On Campus

Sherry Albert, *Department of Occupational Therapy*

Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Joseph Anderson, *Department of Occupational Therapy*

B.S., M.Ed., M.B.A., Pennsylvania State University

Linda Bartholomew, *Department of Occupational Therapy*

B.S., Elizabethtown College

Virginia B. Bates, *Instructor in English as a Second Language*

B.A., Southern Illinois University; M.A., University of California at Los Angeles

Jo Ellyn Berky Beck, *Department of Fine and Performing Arts*

Susan G. Bousliman, *Department of Communications*

B.A., Ohio State University; M.S., University of Wisconsin-La Crosse

Ann S. Dinsmore, *Department of Fine and Performing Arts*

B.S., Elizabethtown College

Marcia L. Englar, *Department of Fine and Performing Arts*

B.M., B.M.E., Augustana College; M.M., Peabody Conservatory of The Johns Hopkins University

David Ferruzza, *Department of Physics and Pre-Engineering, and Director of Pre-Engineering Program*

B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology

Darrel Frey, *Department of Physics and Pre-Engineering*

B.S.M.E., Drexel University

Laszlo Geder, *Department of Occupational Therapy*

M.D., Ph.D., University of Debrecen, Hungary

Doris J. Hall, *Department of Fine and Performing Arts*

B.M., Peabody Conservatory of The Johns Hopkins University; M.M., University of Michigan

Cynthia Hess, *Department of English*

B.S., Millersville State College; M.A., Millersville University

Carol Isaacs, *Supervisor of Developmental Studies Program*

Linda Kirkpatrick, *Department of Fine and Performing Arts*

David E. Leithmann, *Department of Fine and Performing Arts*

B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*

B.S., Indiana University of Pennsylvania

Grant Moore, *Department of Fine and Performing Arts*

Candace H. O'Donnell, *Department of English, and Supervisor of Secondary Education, English*

B.A., Washington University; M.A., Millersville State College

Gretchen N. Patti, *Department of Fine and Performing Arts*

B.S., Elizabethtown College

Debra D. Ronning-Seyler, *Department of Fine and Performing Arts*

B.S., M.A., Indiana University of Pennsylvania

Alison J. Roth, *Department of Fine and Performing Arts*

B.M., Oberlin Conservatory; M.M., New England Conservatory of Music

Janet Rowand, *Department of Occupational Therapy*

B.S., Elizabethtown College

Mary Saverman, *Department of Fine and Performing Arts*

Carl Schroeder, *Department of Fine and Performing Arts*

Laurie A. Showers, *Department of Mathematical Science*

B.S., Elizabethtown College

William M. Sloane, *Department of Communications*

B.A., York College of Pennsylvania; J.D., Delaware Law School of Widener University; LL.M., Temple University; S.J.D., Thomas Jefferson College of Law of Heed University

Janice Stouffer, *Department of Fine and Performing Arts*

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Carol S. Weavill, *Department of Computer Science*

B.S., Elizabethtown College

James Wirtz, *Department of Political Science*

Judy Williams-Henry, *Department of Fine and Performing Arts*

B.F.A., Boston Conservatory of Music; M.S. Wheelock College

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Off Campus Medical Technology

Margaret Black, *Polyclinic Medical Center, Harrisburg, Pa.*
B.S., Lebanon Valley College; M.T. (ASCP)

Sharon Deitrich, *Reading Hospital and Medical Center, West Reading, Pa.*
B.S., Kutztown University

John W. Eiman, *Abington Memorial Hospital, Abington, Pa.*
M.D., University of Pennsylvania School of Medicine

Edward Eisenhower, *St. Joseph Hospital, Lancaster, Pa.*
M.D., Medical University of South Carolina

Gerald Fahs, *Lancaster General Hospital, Lancaster, Pa.*
M.D., Temple University School of Medicine

Janice Fogleman, *Harrisburg Hospital, Harrisburg, Pa.*
M.Ed., Pennsylvania State University; M.T. (ASCP)

Nadine Gladfelter, *Lancaster General Hospital, Lancaster, Pa.*
M.S., Temple University; M.T. (ASCP)

Susan Herr, *St. Joseph Hospital, Lancaster, Pa.*
M.S., Temple University; M.T. (ASCP)

Brenda Kile, *York Hospital, York, Pa.*
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, *Harrisburg Hospital, Harrisburg, Pa.*
M.D., Airlaugga University School of Medicine

John A. Mihok, *Monmouth Medical Center, Long Branch, N.J.*
B.S., University of Maryland; M.T. (ASCP), Catholic University of America; S.M. (ASCP)

Julian W. Potok, *Polyclinic Medical Center, Harrisburg, Pa.*
D.O., Philadelphia College of Osteopathic Medicine

Lynn Russell, *Polyclinic Medical Center, Harrisburg, Pa.*
B.S. Springfield College; B.S. Towson State College; M.A., Central Michigan University; M.T. (ASCP)

Barbara Scheelje, *Abington Memorial Hospital, Abington, Pa.*
B.S., Colby-Sawyer College; M.T. (ASCP)

I. Donald Stuard, *Reading Hospital and Medical Center, West Reading, Pa.*
M.D., University of Rochester School of Medicine

John P. Whiteley, *York Hospital, York, Pa.*
M.D., Temple University School of Medicine

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A.B., University of Pennsylvania. A.M., University of Michigan. Ph.D. University of Michigan

Social Work

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B.A., Elizabethtown College

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Index

- Academic advising, 7
- Academic dishonesty, 14
- Academic dismissal, 12, 15
- Academic due process, 14
- Academic good standing, 12
- Academic honors, 12
- Academic integrity, 14
- Academic judicial system, 14
- Academic load, 8
- Academic majors, 3
- Academic minors, 3
- Academic probation, 12
- Academic program:
 - Core requirements, 4
 - degrees offered, 3
 - individual program adjustments, 9
 - majors, 3
- Academic Standing, 12
- Accounting, 19; see Department of Business, 19
- Adding courses, 9
- Administration, 65
- Advanced placement, 6
- Advising, 7
- Allied Health, 6, 17, 54
- Anabaptist and Pietist Studies Minor, 55
- Anthropology, 52; see Department of Sociology/Anthropology/Social Work, 50
- Appeal of a grade, 10
- Applied music and ensembles, 34
- Art, 31
- Attendance in class, 9
- Auditing courses, 8
- Biology, Department of, 17, 54
- Board of Trustees, 65
- Brethren Colleges Abroad Program, 5
- Business, Department of, 19
- Business Administration, 20; see Department of Business, 19
- Calendar 1989-90, Cover II; 1990-91, 68
- Calculation of grade point average, 11
- Challenge testing, 7
- Change of major, 7
- Change of minor, 7
- Change of registration, 9
- Cheating, 14
- Checksheets, 7
- Chemistry, Department of, 22
- Class standing, 11
- CLEP Examinations, 6
- College Assembly, 16
- College Scholars, 12
- Communications, Department of, 24
- Computer Science, Department of, 26
- Continuing education, 15
- Core, General Education, 3
- Course load, 8
- Course withdrawal, 10
- Credits, 10; by examination, 6; class standing, 10; graduation, 13; transfer, 18
- Dance, 32; see Department of Fine and Performing Arts, 31
- Dean's List, 12
- Declaration of major, 7
- Declaration of minor, 7
- Degrees offered, 3
- Departmental honors, 12
- Departmental student privilege, 12
- Developmental Studies, 15
- Directed Study, 5
- Directory, 58; adjunct faculty, 61; administrative staff, 65; faculty, 58; trustees, 65
- Dismissal, academic, 15
- Drawing, 46; see Department of Physics and Pre-Engineering, 44
- Dropping courses, 9
- Early participation in graduation, 13
- Early warning system, 11
- Earth Science, 44, 45
- Economics, 21; see Department of Business, 19
- Education, Department of, 28; see individual departmental secondary education certification requirements; biology, 17; chemistry, 22; general science, 54; physics, 44; social studies, 55
- Educational Philosophy and Objectives, 2
- Engineering, 44; see Preengineering
- English, Department of, 29
- Faculty, 57; adjunct, 60; emeriti, 57
- Fine and Performing Arts, 31
- Foreign study, 5
- Forestry and Environmental Management Program, 17, 54
- French, 39; see Department of Modern Languages, 38
- Full-time status, 7
- General Education Core, 3
- General Science Certification, 55
- German, 39; see Department of Modern Languages, 38
- Grades, 10
- Grade appeal, 15
- Grade Point Average, 11, 13
- Graduation, 13
- Graduation, with honors, 12
- Graduation requirements, 13
- Health, 43; see Department of Physical Education and Health, 43
- Health Care, 22; see Department of Business, 19
- Health Professions Advisory Committee, 52
- History, Department of, 35
- Honors, graduation, 11
- Honors courses, 5, 13
- Incomplete grades, 11
- Independent study, 5
- Individual program adjustments, 9
- Interdisciplinary programs, 53
- International Education Graduation Requirements, 4
- International Studies Minor, 56
- Internships, 6
- Joint institution programs, 6
- Junior year abroad, 5
- Leave of absence, 10
- Lecture Series, 16
- Long-term absences, 10
- Major, change of, 7
- Major, declaration of, 7
- Majors, list of academic, 3
- Mathematical Sciences, Department of, 37
- Medical Technology Programs, 23; see Department of Chemistry, 22
- Medical withdrawal, 10
- Minor, declaration of, 7
- Minors, list of academic, 3
- Mission statement, 2
- Modern Languages, Department of, 38
- Music, 32
- Music education, 32; see Department Fine and Performing Arts, 31
- Music therapy, 32; see Department of Fine and Performing Arts, 31
- Occupational Therapy, Department of, 39
- Off-Campus Study, 5
- On-Campus Credits, 13
- Overload credits, 8
- Pass/No pass grading, 11
- Part-time status, 7
- Peace and Conflict Studies Minor, 55
- Philosophy, Department of, 42
- Physical Education and Health, Department of, 43
- Physics and Pre-Engineering, Department of, 44
- Plagiarism, 14
- Political Science, Department of, 46
- Preengineering, 6, 44; see Department of Physics and Pre-Engineering, 44
- Preforestry, 6
- Preallied Health Programs, 6, 54
- Premedical: program, 53 and Allied Health Program, 6, 54
- Pre-engineering, 6; see Department of Physics and Pre-Engineering, 44
- Preregistration, 9
- Probation, academic, 12
- Professional writing, 29; see Department of English
- Program Adjustments, Individual, 8
- Program Variations, options, 5
- Psychology, Department of, 47
- Public Administration Minor, 57
- Purpose, Statement of, 2
- Quality points, 11
- Rank in class, 11
- Readmission, 10, 12
- Registration, 9
- Religious Studies, Department of, 48
- Repeating courses, 8
- Residency requirements, 13
- Schedule changes, 9
- Scholar's privilege, 12
- Social Studies Certification, 54
- Social Work, 52; see Department of Sociology/Anthropology/Social Work, 50
- Sociology/Anthropology/Social Work, Department of, 50
- Spanish, 39; see Department of Modern Languages, 38
- Special studies, 5
- Standards of academic integrity, 14
- Statement of Purpose, 2
- Student responsibilities, 7
- Study abroad, 5
- Theatre, 35; see Department of Fine and Performing Arts, 31
- Transcripts, 9
- Transfer credits, 8
- Trustees, 65
- Tutorials, 5
- Visual Arts, 31
- Withdraw: from classes, 10; from the College, 10; Medical, 10
- Writing Competency Requirement, 3

Calendar 1990-91

Fall Semester

August	20-24	Faculty Meetings and RA and PC Training
	25	Freshmen Arrive
	27	Registration Day; Evening Classes Begin, 6:30 p.m.
September	28	Day Classes Begin, 8:00 a.m.
	3	Labor Day - No Classes
	4	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	5	Fall Break - No Classes
	17	Mid-term
	20	Homecoming
November	21	Friday Schedule of Day Classes; Classes End at 5 p.m.
	22-25	Thanksgiving Recess
	26	Classes Resume 8:00 a.m.
December	7	Classes End, 5:00 p.m.
	10-15	Final Examinations

Spring Semester

January	7-11	Faculty Meetings and In-Service Programs
	14	Registration Day
	15	Classes Begin, 8:00 a.m.
March	1	Mid-term
	2-10	Spring Break - No Classes
	11	Classes Resume, 8:00 a.m.
March 29 - April 1	28	Easter Recess Begins at 5:00 p.m.
		Easter Recess
	1	Evening Classes Resume, 6:30 p.m.
April	2	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes
	3	Classes End, 5:00 p.m.
May	6-11	Final Examinations
	18	88th Commencement

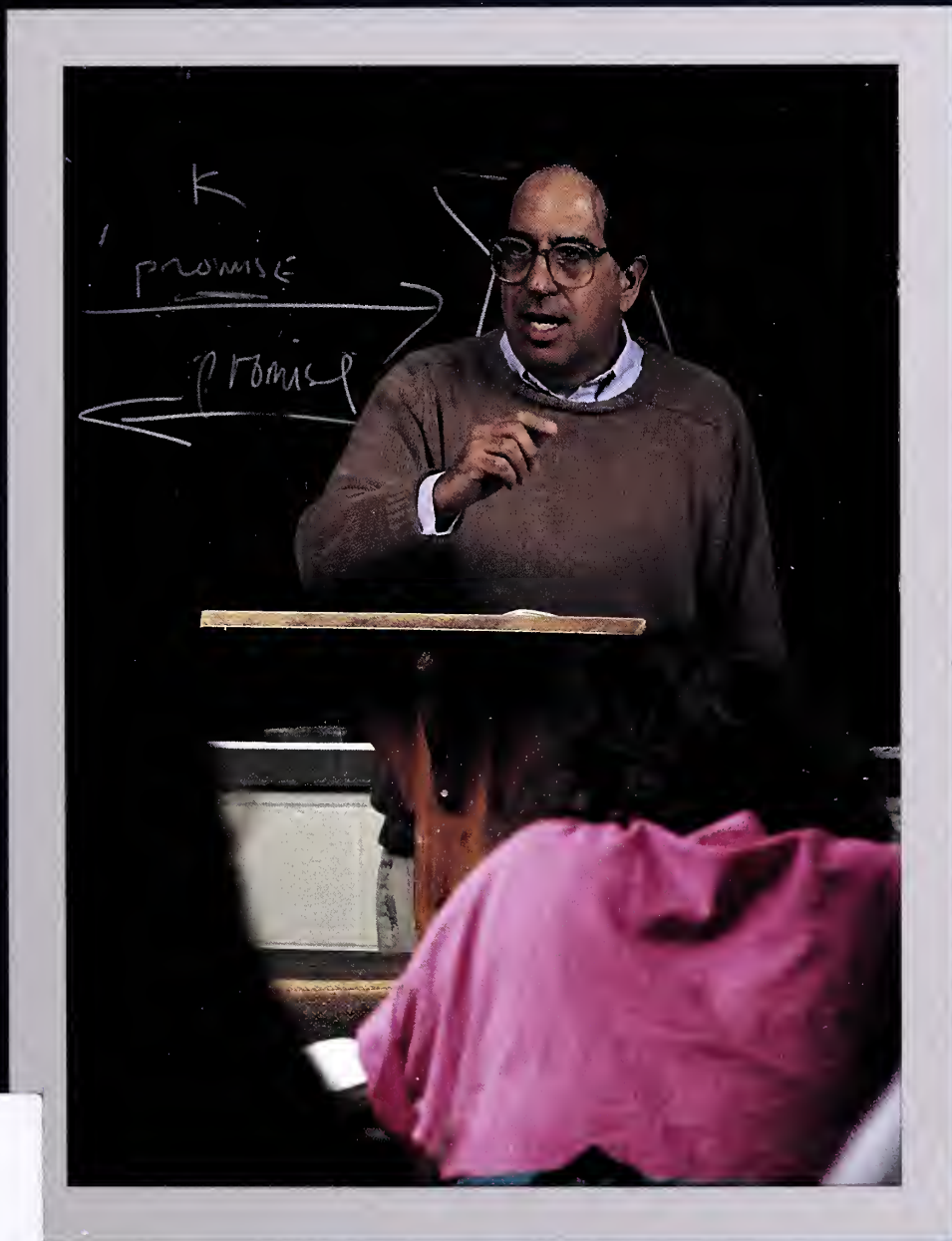
Summer Sessions

May 20 - June 21	Summer Session I
June 24 - July 26	Summer Session II
May 20 - July 9	Evening Summer Session

Elizabethtown COLLEGE



1990-91 Academic Program



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Calendar 1990-91

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	18	88th Commencement

Summer Session

May 20 - July 10

Elizabethtown College is accredited by the Middle States Association of Colleges and Secondary Schools.

The policies and provisions contained in this catalog are subject to the right of the trustees, administration, and faculty to repeal, change, or amend them at any time.

The provisions of this booklet are not to be regarded as an irrevocable contract between Elizabethtown College and the student or between the College and the parents or guardians of the students.

Elizabethtown College complies with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable, federal, state, and local statutes, ordinances, and regulations. Elizabethtown College does not illegally discriminate against students, prospective students, employees, or prospective employees on the basis of race, color, religion, ethnic or national origin, personal handicap, age, or sex.

The Academic Program



Contents

Educational Philosophy and Objectives	2
The Academic Program	3
Course Descriptions	18
Biology	18
Business	21
Chemistry	25
Communications	28
Computer Science	30
Education	33
English	34
Fine And Performing Arts	37
(Art, Dance, Music, Theatre)	
History	42
Mathematical Sciences	44

Modern Languages	46
(French, German, Spanish)	
Occupational Therapy	47
Philosophy	50
Physical Education And Health	51
Physics	52
Political Science	54
Psychology	56
Religious Studies	57
Sociology And Anthropology	59
Social Work	61
Interdisciplinary Programs	63
Directory	70
Index	81

1990-1991

Elizabethtown College

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Elizabethtown, Pennsylvania 17022-2298

Elizabethtown College:

Educational Philosophy and Objectives

The purpose of the founders of the College was to achieve "such harmonious development of the physical, mental, and moral powers of both sexes as will best fit them for the duties of life and promote their spiritual interests." The motto of the College for years expresses this goal: "Educate for Service."

The original charter statement of purpose identified the important outcomes of education as being the development of critical and constructive habits of thought; the capacity for clear and coherent self-expression; the understanding of the natural, social and cultural world; the acquiring of a sense of personal, ethical, and spiritual values and of responsibility to the society; and the acquisition of skills and knowledge in a specialization to make the student an effective and productive member of society. In developing a statement of philosophy and objectives that both reflect our present understandings, the following represents a reasonably broad institutional consensus of the appropriate educational philosophy and goals for the years ahead to which the full College community can and should relate:

Founded by members of the Church of the Brethren in 1899, Elizabethtown College aims to develop sound intellectual judgment, keen moral sensitivity and an appreciation for beauty in the world. This educational process fosters the capacity for independent thought and commitment to personal integrity. In keeping with its historical and religious tradition, the College affirms the values of peace, justice, and human dignity, striving to achieve a distinctive blend of the liberal arts and professional studies. This union of the world of spirit and the world of work is expressed in the College motto, "Educate for Service," and on its seal, *Deus Lux et Veritas*.

The College fulfills this mission by:

- Striving to attain a diverse academic community.
- Promoting cultural pluralism and international understanding in a collegial community.
- Creating an environment that encourages the spirit of free inquiry, stimulates intellectual curiosity, and cultivates academic achievement.
- Developing the skills for critical analysis and effective communication.
- Designing programs that foster maturity, leadership, and responsible citizenship.

- Providing campus-wide support services necessary for the development of mind, body, spirit.
- Serving as a learning, resource, and cultural center for society at large.

The institutional goals for the academic program at Elizabethtown College, in outline, reflect this general statement of educational philosophy:

1. A threefold purpose in the education of students:
 - a. A general education (core) requirement, developing analytical and relational process of thought, clear and coherent means of self-expression, and a growing understanding of self and environment through distributional and integrative requirements in the liberal arts.
 - b. A specific education requirement or major, preparing the student for advanced studies and/or career opportunities by adding the different experience of specialized in-depth knowledge to the breadth of the general educational requirements.
 - c. A body of electives ensuring flexibility in each student's program that will best suit individual needs and interests, whether in general or major areas of study.
2. Response to contemporary needs for greater international understanding, by providing general education in intercultural studies and languages.
3. Provision of support in both general education and major programs for cross-disciplinary and interdisciplinary education.
4. For major disciplines of study, inclusion of opportunities in most of the liberal arts traditions of sciences, fine arts, humanities, and social sciences, and in the professional areas; while maintaining balance between professional and liberal arts programs of study for majors.
5. Provision for adult educational opportunities in a variety of traditional and non-traditional modes, integrated as far as possible with the regular educational program and faculty.
6. Fostering an environment supportive of faculty research and professional development.
7. Supporting as a part of its regular educational program quality experiential-learning programs such as clinical experiences, supervised internships, field study and other off-campus courses, and similar activities.
8. Continuing to support or to develop as appropriate, strong cooperative programs with other institutions of higher learning.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of at least 125 or 128 semester hours of credit, a grade point average of at least 2.00 in the major, a grade point average of at least 2.00 overall, and the completion of all requirements of the major and the Core Program.

The College offers four additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, the Associate of Arts, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B. S.
Business Administration, B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Early Childhood Education, B.S.
Economics (Business), B.A.
Elementary Education, B.S.
Engineering (Physics), B.A.
English, B.A.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages (French, German or Spanish), B.A.
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.
Occupational Therapy, B.S.
Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A.

Religious Studies, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work, B.A.
Sociology, B.A.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Anabaptist and Pietist Studies (Interdisciplinary)
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Communications
Computer Science
Economics (Business)
English
Fine and Performing Arts
History
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Peace Studies (Interdisciplinary)
Philosophy
Physics
Political Science
Psychology
Public Administration (Interdisciplinary)
Religious Studies
Sociology
Statistics (Mathematics)
Visual Arts

The Core Program

Through the Core Program, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to experience a core curriculum of traditional and innovative liberal arts areas that complements both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: the Common Core, which consists of the Freshman Seminar and the Junior/Senior Colloquium; and Areas of Understanding in which students may choose from approved Core courses in prescribed academic areas. (Approved courses are identified in the course listings.)

Alternatives to the Core Program, or deviations from it, must be approved in advance by the Academic Standing Committee and the Dean of the Faculty.

Common Core Credit Hours

Freshman Seminar 3
Entering freshmen take a Freshman Seminar during their first semester.

Junior/Senior Colloquium 3
All courses in all Areas of Understanding must be completed before students begin the colloquium.

Areas of Understanding Credit Hours

Power of Language 3
Based upon writing skill level, students are placed in either English 011 (a college composition preparatory course that does not count for Core or graduation credit), English 100, Writing and Language (a college composition course), or an advanced 100-level Power of Language course. Students placed in English 011 must eventually take English 100 for Power of Language Core credit.

Mathematical Analysis 3
Based upon analytical skill level, students are placed in either Math 011 (a college mathematics preparatory course that does not count for Core or graduation credit), or a 100-level mathematics or symbolic logic course.

Creative Expression 3
Complete three hours in Creative Expression courses.

Cultural Heritage 6
Complete six hours in Cultural Heritage courses.

Foreign Cultures and International Studies 3-5
Complete three to five hours in Foreign Cultures, International Studies, or foreign language courses. Students who use modern languages to fulfill this requirement complete either Modern Language 112, 211, or 212. Language background and placement test results determine the appropriate level of college language study (112, 211, or 212).

Natural World 7-8
Complete seven to eight hours in Natural World courses. One course must be a laboratory course.

Social World 6
Complete six hours in Social World courses.

Values and Choice 3
Complete three hours in Values and Choice courses.

Physical Well Being 3
Complete three hours in Physical Well Being courses, at least two hours of which must be devoted to physical activity. No more than five PWB courses may be counted

for graduation credit.

Additional Requirements:

- Students must take at least four 200-level courses to complete the Core Program. Prerequisites for 200-level Core Program courses include completion of the Freshman Seminar, Mathematical Analysis, and Power of Language, and three other 100-level Core Program courses.
- In Areas of Understanding requiring two or more courses, students must take the courses in different disciplines.
- Physical Well Being courses are excluded from the above restrictions, and do not satisfy the 100-level prerequisite requirements to take 200-level Core Program courses.
- Students may count only one course in their major department for Core.
- Students may not use a course in more than one Area of Understanding.
- Students may not use a course to fulfill both a Core Area of Understanding, and a major requirement.
- Seniors may not enroll in 100-level Core Program courses except with the permission of the Dean of the Faculty.

Course Descriptions for Common Core

FS100* Freshman Seminar

3 credits. The Freshman Seminar provides an educational experience which is composed of several important components. First, it aims to develop intellectual skills such as critical analysis and synthesis, and communication skills such as speaking and writing. Second, it aims to broaden definitions of learning. The student is exposed to multiple ways of acquiring information and knowledge. Third, it establishes the integration of knowledge. Using the instructor's major field of study as a foundation, this course promotes connections across disciplines.

The emphasis on intellectual and communication skill development, the nature of learning and interrelationships among academic disciplines introduces students to the intellectual life of the College and lays the foundation for self-directed, independent thinking. For these reasons, the Freshman Seminar is planned to assist the student in the transition from high school to college.

JSC300* Junior/Senior Colloquium

3 credits. In the Junior/Senior Colloquium, students return to the seminar setting and explore a selected contemporary issue of national or world significance from perspectives other than those of the major. They are engaged in serious discourse with students and faculty from other disciplines, examining broader intellectual, social, and ethical concerns associated with liberal learning. This experience culminates in the writing of a major paper which integrates prior learning and the diverse studies of the undergraduate experience.

Old Core/New Core

The Core Program described above applies to students who enter the College in the fall of 1990 or subsequently. Students who entered prior to the fall of 1990 complete the General Education Core (known as "Old Core"). Specific requirements of the "Old Core" are found in the Academic Program books of 1989-90 or earlier. (The Core Program described in this catalog is known as "New Core.")

The "Old Core" includes both Core Area Requirements in Literature, Modern Languages, Fine Arts, Religion or Philosophy, History, Social Science, Mathematics, Natural Science and Physical Education, and the College Requirement in International Education. Please refer to the 1989-90 Academic Program book for specific details.

Program Variations and Options

In addition to the majors and minors indicated above, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued, securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Registrar at the beginning of the semester during which it will be completed. Application forms for Independent Study are available in the Registrar's Office.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional surcharge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 18 hours as a result of the Directed Study registration are charged the current part-time rate for tuition for those hours in excess of 18, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: Students must register for Directed Studies and Tutorials prior to beginning course work. Registration forms are available in the Registrar's Office.

Off-Campus Study

Study Abroad

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering a year of study in China, Germany, France, Japan, or Spain. Students may study at Phillips-University, at Marburg/Lahn, West Germany; at the University of Strasbourg, France; at the University of Barcelona, Spain; at Hokusei Gakuen University, Sapporo, Japan; or at Dalian Institute of Foreign Languages, Dalian, China. A wide selection of courses is offered in the social sciences and the humanities. Students are given intensive language instruction prior to the opening of the university semesters.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of German 212 and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of French 212 or Spanish 212, outstanding students who have completed French 112 or Spanish 112 will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country. The credits earned abroad are transferred toward the degree at Elizabethtown. A faculty advisor is in residence in Europe during the year. About 25 students are accommodated at each university; Elizabethtown College has a quota of three or four for each. Interested students should confer with Dr. Sharon R. Trachte, BCA Program Coordinator, and their major advisor.

As part of the BCA program, the College offers a semester in England. Students attend full-time at St. Mary's College, Cheltenham, England, where they enroll in a seminar in British Culture and Education, and select an additional three or four courses. Credit for these courses is applied toward the degree at Elizabethtown College. Fall semester students depart in early September and return before Christmas; spring semester students depart in late January and return in late May. For information, contact Dr. Trachte.

Joint Institution Programs

In these programs, students study at the College and at

affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: pre-forestry with Duke University; pre-engineering with Pennsylvania State University; biology health professions and pre-allied health with Thomas Jefferson University.

In the **Pre-forestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Pre-engineering is a 3-2 program with Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of work in an engineering field, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from Pennsylvania State University. For further details, see the description in the Physics Department listing.

The **Biology Health Professions** major is a 3-2 program with Thomas Jefferson University College of Allied Health Sciences. The student spends three years at the College; after a year at Thomas Jefferson, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional upper division program results in the awarding of a bachelor of science degree from Thomas Jefferson University. For further details, consult the Biology Department listing.

In the **Pre-allied Health programs**, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Biology Department listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students' education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Fine and Performing Arts, Chemistry, Occupational Therapy, and Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the Registrar or Department Chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- a. All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- b. Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or better on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in progress at the time of the examination.
- c. For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Three of these credits may be applied to the Core Program requirements in Natural World.
- d. For the examinations in Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the Core Program.
- e. For the English Composition and Mathematics Examinations, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the Core Program.

2. *Subject Examinations*

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty. There are two types of Challenge Tests: Tests for Academic Credit and Tests for Placement and/or Waiver.

Tests for Academic Credit are of two kinds: *Proficiency Tests* such as the swimming proficiency test; and the *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option.

Tests for Placement and/or Waiver comprise tests such as those given for placement in English, modern languages, or mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Proficiency Tests and Tests for Placement and/or Waiver given at the initiative of the College are administered without fee to the student.

There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a Test for Academic Credit is \$50; the fee for a Test for Placement and/or Waiver is \$25. In addition, appropriate tuition is charged for academic credit awarded as a result of Challenge Tests; the charge is 50% of the appropriate part-time tuition rate in effect at the time the test is administered.

Placement Testing

During the summer orientation program all new students take a mathematics placement test. In addition, all students with more than one year of high school language must take the appropriate modern language placement test. The languages tested are French, German and Spanish. If students have studied more than one of these languages, they take the placement test in the language in which they have had the most intensive study or the language in which they wish to pursue further study at the college level.

Students who wish to use modern language to fulfill the Foreign Cultures and International Studies Area of Understanding in the Core Program complete either Modern Language 112 or 211 or 212. Language back-

ground and placement test results determine the appropriate level of college language study (112, 211 or 212). Students who demonstrate competence at the 111 level enroll in 112. Students who demonstrate competence at the 112 level enroll in 211. If competence is demonstrated at the 211 level, the appropriate course is 212.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the Core Program, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Academic Advising

Each student who is enrolled in a degree program is required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors, and minors. (Certain non-degree students are also assigned advisors.)

Freshman Advising Program. The Freshman Advising Program is designed to touch on all aspects of the freshman experience. The goal is to assist freshmen in realizing the maximum educational benefits available to them by helping them to better understand themselves and to learn to use the resources of the College to meet their special educational needs and aspirations. Course selection is included but is not the primary task to be accomplished.

Upperclassman Advising. Upperclassmen who have declared a major are assigned an academic advisor from their major department. Upperclassmen who have not yet declared a major are assigned an advisor from the Center for Counseling and Student Development.

All advisors work closely with students during the preregistration period for course selection for the coming semester. Consultation with the advisor also occurs during the schedule change period and the drop-add period at the beginning of each semester. Departmental advisors also provide assistance in regard to graduate or professional school and/or career planning.

Student Responsibilities

Students are required to consult with their major advisors as to course selection, course sequences, graduation requirements, etc. (Consultation with the second major or minor advisor is an expectation but not a requirement.) Preregistration Course Request Sheets, Request for Schedule Change forms, and Drop and Add forms require the major advisor's signature, as do certain other forms and documents from the Registrar's Office.

The advisor's signature on various documents indicates that the student has consulted with the advisor; *however, it is the student's responsibility to ensure that all graduation requirements have been met and that other requirements, regulations, or deadlines have been observed.*

Checksheets for academic majors and minors are available in the Registrar's Office. These are helpful in noting the completion of program requirements. In addition, courses included in the major or minor GPA are noted.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors and minors. Students are expected to consult with these advisors in regard to course selection, course sequence, and graduation requirements.

Declarations and changes of majors and minors are facilitated in the Center for Counseling and Student Development. When a change of major or minor occurs, records are transferred from one department to another; however, the student must initiate the change in the Center.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported in writing to the Registrar's Office immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Full-time/Part time Status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking fewer than 12 hours per semester pays the regular semester hour rate plus applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credit hours per semester to be eligible for intercollegiate athletic competition.

Course Load

Since the completion of at least 125 or 128 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of approximately 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

A student with average grades may carry up to 18 semester hours of work in any given semester except the summer session, when the maximum is nine semester hours for the seven-week period. A student who has achieved a cumulative grade point average of 3.00 or above may carry up to 20 semester hours credit in a semester, or 10 semester hours credit in the summer session. For each semester hour above 18 for which a student is enrolled in a given semester, an additional fee is charged, and approval by the Associate Dean of the Faculty is required. Students who wish to petition for an overload should obtain a form in the Registrar's Office.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Registrar's Office. Failure to do so will result in a duplication of hours carried, a possible delay in graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated are as follows:

1. A student may repeat any course in which the student receives an *F* or *NP*.
2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's advisor and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a course that is prerequisite to a Core Program requirement. The student must repeat the course in which the *D* grade was received within one year of the original enrollment in the class (or the next semester in which the course is offered if the course is offered less frequently than once a year).
3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit are determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit

to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Registrar's Office. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior* to enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the Registrar. Students must request that the Registrar's Office of the transferring institution send an official transcript to the Registrar's Office at Elizabethtown College. Facsimile (fax) copies and student delivered transcripts cannot be accepted.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Registrar's Office, in person or by mail, at least one week prior to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/ professional schools or for employment. Two copies of the final record are also available free to each student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Registrar's Office at least one week prior to the date needed. Federal law requires that all requests must be made **in writing by the student**. Neither telephone requests nor facsimile (fax) requests can be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Registrar's Office; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.

2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Elizabethtown College does not send or accept facsimile (fax) copies of transcripts.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a non-degree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is no guarantee that a student will be registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit for the next semester. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the advisor. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of The Center for Continuing Education for details about registration.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Registrar's Office.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds

must be approved by the academic advisor and completed through the Registrar's Office. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Registrar's Office. The completed form must be signed by the academic advisor and returned to the Registrar's Office; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Registrar's Office. The completed form must be signed by the academic advisor and returned to the Registrar's Office; the course drop is not complete until this is done.

Class Absences and Withdrawal Policy

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor or the College may dismiss a student from a course for excessive absences. Such dismissals in weeks 1-4 of the semester result in removal of the course from the student's record; after the fourth week, a grade of W/F is recorded for the course. A student may appeal for reinstatement to the Academic Standing Committee.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Long-Term Absences

Long-term absences from all courses/campus may result in mandatory withdrawal from the College. After 15 consecutive class days of absence from all classes, a student is considered to have withdrawn from the College. (Students absent for verified medical reasons will be granted a Medical Withdrawal (see below).).

Withdrawal

Withdrawal from Classes

Students withdraw from classes through the Registrar's Office. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or W/F. All withdrawals after the end of the eleventh week of the semester receive grades of W/F unless the withdrawal from College is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of W/F is calculated into the student average as though it were an F.

Withdrawal from College

Students who withdraw from the College during a semester also withdraw from all of their classes for that semester. Full-time students withdraw from the College through the Center for Counseling and Student Development; part-time students withdraw through the Registrar's Office. Students who withdraw during the semester are expected to leave the campus as of the effective date of their withdrawal.

For purposes of billing, room reservation, academic responsibility, etc., the effective date of withdrawal is the date on which the completed official notice is returned to the Center for Counseling and Student Development or the Registrar's Office. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical Withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstances. Medical Withdrawal assumes an incapacity that prohibits acceptable academic performance, not simply a hardship or inconvenience. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Medical Withdrawal is withdrawal from the College and, therefore, from all courses. A student does not selectively withdraw from individual courses under the rubric of "medical withdrawal."

Readmission

Students who leave the College in academic good standing (minimum 2.0 cumulative grade point average) must contact the Admissions Office for readmission. Students who leave the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission (see page xx).

Leave of Absence

A student may take a leave of absence from the College to study abroad in the BCA program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program.

Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Any administrative fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$100 deposit must be returned to the Registrar's Office by May 1 or December 1 to ensure a place in the College and in the courses selected.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	Non-Pass (failure)
AUD	Audit

Quality Points

A 4 point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester Hour of Credit
A	4.0
A-	3.7
B+	3.3

B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Grade Point Average Calculation

The grade point average is dependent upon the credit hours attempted and the quality points accumulated. To determine the grade point average for a semester, multiply the credit hours for each course by the quality points for the grade earned in the course, sum the quality points for the semester, and divide the total quality points by the total credits attempted for the semester. Courses in which a grade F or WF is received are included in the calculation. Courses in which a grade of W is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester GPA. For the major GPA, use all courses in the major department and all courses required for the major. For the minor GPA, use all courses in the minor department and all courses required for the minor.

Incomplete Grades

A grade of I may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of I are assigned for extenuating circumstances only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the I in cases of suspected academic dishonesty.

All grades of I received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of F.

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their Physical Well Being courses on a pass/no pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).
2. The cumulative average must be 2.75 or higher.

3. The selected course may carry no more than five semester hours of credit and **must be a free elective**. It must be outside the major or minor department, may not satisfy a Core Program requirement, and may not be a course required by the major or minor.

4. No more than four courses in total (excluding Physical Well Being) may be taken under this grading option.

Pass/No Pass registration forms are available in the Registrar's Office. Once a course is registered under the Pass/ No Pass option, it may not be changed. Grades of D- or higher are recorded as Pass; grades of F are recorded as No-Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying D or F grades in 100 or 200-level courses at the end of the fifth week of the semester are notified of their deficient performance. Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits, a junior; with 90 credits, a senior.

Rank in Class

The student's rank in class at graduation is based on the credits, grades, and quality points earned at Elizabethtown College.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

Semester hours		Cumulative
Attempted	with	Grade Point Average below:
1 - 18		1.70
19 - 36		1.80
37 - 54		1.90
55 - 72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses or seven semester hours.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is on academic probation. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) or on academic probation may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence from the College of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the Registrar.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the Provost, who will direct warranted appeals to the Academic Standing Committee.

Academic Honors

Dean's List

A full-time student who earns a quality point-credit ratio of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

A College Scholar is a currently enrolled student who, having completed at least 60 credit hours at the College,

has achieved a cumulative grade point average of 3.75 or higher. Scholars are identified at the end of the spring term, and are publically recognized at the Convocation at the beginning of the following academic year. They are awarded a certificate and their status as College Scholar is recorded on their permanent record.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative quality point-credit ratio of 3.50 is graduated *cum laude*; a ratio of 3.75, *magna cum laude*; a ratio of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria include, but are not limited to, the following: the student must have a minimum G.P.A. of 3.5 in the major/minor and overall cum; possess outstanding abilities in areas such as research projects or papers, etc., and have pursued academically rigorous courses in the discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's Honor List during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis without registration or credit.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. In addition, students who are close to completion of graduation requirements may petition for permission to participate in the May graduation ceremonies. In order to participate as "an early participant," the student *must have a 2.0 cumulative grade point average in the major and be*

in academic good standing (2.0 overall g.p.a.) at the time of the commencement ceremony. In addition, the student must be close to completion of all graduation requirements. "Close to completion" normally means "not in excess of six credit hours of course work." Under no circumstances will approval be given for needing more than ten credit hours of course work. *No exceptions can be made to these standards.* Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work will participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed on the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit internship.

Credit Requirements

To receive a Bachelor of Arts or Bachelor of Science degree from Elizabethtown College, the student must earn a minimum of 125 or 128 semester hours of credit. (MA 011, EN 011, ESL 175 and ESL 176 are not counted toward this credit hour graduation requirement.) Students who enter the College in the fall of 1990, or subsequently, are required to complete the Core Program (New Core) and at least 125 semester hours of credit. Students who entered prior to the fall of 1990 must complete the General Education Core (Old Core) and at least 128 semester hours of credit. In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the course outline (see departmental listings for specific information).

Program Requirements

Students are required to complete successfully all requirements of the major and all of the Core Program requirements. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a quality point-credit ratio of at least 2.00, with a minimum average of 2.00 in a major (and a 2.00 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have a ratio of at least 2.00 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in

the major, at least eight of which are at the upper level (normally 300 and 400 level), and 2) at least 30 of the last 60 credits.

Note: Credits earned at the University Center in Harrisburg or in the BCA program while the student is matriculated at the College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the catalog dated four years prior to graduation, or, for major requirements, by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or, for major requirements, the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine requirements for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the Registrar by February 15.

Early Participation

Petitions for early participation in the May graduation ceremony must be presented in writing to the Registrar by February 15 and must include the reason(s) for the request and supporting rationale. The Registrar, in consultation with the Provost, will decide each case on its individual merit. *Approval is not automatic.* Early participants are identified by a special notation in the Commencement program.

In order to participate as "an early participant," the student *must have a 2.0 cumulative grade point average in the major and be in academic good standing (2.0 overall g.p.a.) at the time of the commencement ceremony.* In addition, the student must be close to completion of all graduation requirements. "Close to completion" normally means "not in excess of six credit hours of course work." Under no circumstances will approval be given for needing more than ten credit hours of course work. *No exceptions can be made to these standards.* Diplomas are distributed to early participants at the next appropriate graduation date following actual completion of all work required for graduation. The student must contact the Registrar's Office to request the diploma, indicating the address to which the diploma is to be sent.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature are assumed by the Academic Standing Committee and the Academic Review Board.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Center for Counseling and Student Development, who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Board is comprised of three faculty members, two students, and one administrator appointed by the president. The provost serves as convener of the board but he is not a member and does not vote in decisions made by the board. The board handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard to Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments.

With Regard to Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.
2. To request a hearing before the Academic Review Board when found by a faculty member to be in violation of the standards of academic integrity and to receive a written statement from that board summarizing the findings of the board and its disposition of the matter.
3. To request a hearing before the Academic Standing Committee when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.
4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably in academic matters and will conduct themselves accordingly.

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of course assignments as well.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information for an assignment when such information is not appropriate for the assignment. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of F in the course and possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.

2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have another person in attendance, also.

3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A

copy of this notification is sent to the Office of the Provost.

4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Board. The request for a hearing must be presented in writing to the provost within five days of receipt of the notice of information.

5. The provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is the provost's judgment that academic dismissal is appropriate, he will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.

6. The student will have the option of accepting the provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the Academic Standing Committee within five days of receipt of the provost's decision.

Grade Appeals

Questions concerning grades should be called to the attention of the professor immediately after the official grade report is received from the Registrar's Office.

Procedures For Grade Appeals

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.

2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal. A request for the meeting must be submitted within thirty days of the date on which the grades are formally issued from the Office of the Registrar.

3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision.

4. The student will have the alternative, within ten days of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the provost.

5. The provost will review the detail of the appeal. The Academic Review Board will hear warranted appeals as determined by the provost.

Developmental Studies

As Elizabethtown College strives to attain diversity, promote cultural pluralism, and develop skills for critical analysis, some members of the freshman class with less than adequate educational credentials gain admission through the Developmental Studies program.

Students with weaknesses in high school grades, class rank, and/or SAT scores but who are motivated and possess academic potential develop a sense of responsibility for their own college experience through the Developmental Studies program. Skills enhancement in the program concentrates on specific skills deficiencies in the three basic areas of academic life: personal, verbal and quantitative.

Intense academic and personal counseling concentrates on attitudinal and behavioral barriers to success in the classroom. Personal and attitudinal issues receive address in the Freshman Seminar class specially designed for Developmental Studies students.

The Freshman Seminar is focused to direct the student towards academic and social success in college and to diversify the learning experience at Elizabethtown College. The Freshman Seminar is organized to increase student potential for success by assisting the student in learning academic skills. In addition to content area, topics include time management, memory techniques, reading for comprehension, test taking, college resources and attitudinal/behavioral changes.

Verbal skills (reading, writing, listening and speaking) are also dealt with in the Freshman Seminar, but may be enhanced by a basic English class, EN 011, Fundamentals of Composition. Some students in the program may be placed in this class on the basis of their admission scores.

Quantitative remediation may also be necessary for some students. If so, MA 011, Intermediate Algebra, teaches basic mathematics skills vital to some curriculum. Placement in Intermediate Algebra is also determined by test scores.

For select freshman students only, the Developmental Studies Program exists to help students make the transition from high school to college with success.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers

outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the University Center, 2986 N. Second St., Harrisburg, PA 17110.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisors to develop individualized study plans leading to Associate, Bachelor of Professional Studies, or Bachelor of Liberal Studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to meet the external degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September, 1989, the speaker was Dr. Wallace T. MacCaffrey, the noted Harvard University scholars and authority on British history of the 16th and 17th centuries.

Lecture Series

Three lectures are sponsored at Elizabethtown College through which national and international leaders speak on political, ethical, social, and economic topics of major importance.

The lectures are:

The Frank S. Carper Lecture on Ethics, Business and the Professions is an endowed lectureship named in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in honor of the late John F. Chubb of the Class of 1961 who was a trustee of Elizabethtown College, and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown.

The President's Lecture, first held in March, 1988, is a forum for a person of national or international reputation to speak on a contemporary issue. The theme in 1989 was World Economics.

College Assembly

The series, popularly known as "Monday at 10," is a dedicated period on most Monday mornings throughout the academic year when people from iverse experiences discuss contemporary issues, or present cultural programs such as concerts, dramatic readings, and mime.

The series is planned to expand and enhance students' awareness of their culture, history, and environment.



Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text; the reader is referred to the appropriate department.

Accounting

See *Department of Business*, page 21.

Anthropology

See *Department of Sociology and Anthropology*, page 59.

Department of Biology

Professors Dively, Heckman, Hoffman
Associate Professors Laughlin (*Chair*), Polanowski

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The curriculum, leading to a Bachelor of Science degree in Biology, prepares students for the rigors of graduate school and professional schools of medicine, and for biologically-oriented employment opportunities.

The department involves students in research studies with professors through senior seminars and independent study projects.

The Department of Biology offers a choice of four majors leading to a bachelor of science degree. In addition, the department offers a biology minor and two programs leading to receipt of a degree from cooperating institutions.

The Bachelor of Science: Biology Major prepares the student for a biologically-related profession or for gradu-

ate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 411, 412, and 12 additional hours in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; Mathematics 117 or 121, and 151; and a foreign language through the 112 level or one Computer Science course selected from 115, 120, or 121.

The Bachelor of Science: Biology Major/Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Biology Major/Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University. The specific requirements are Biology 111, 112, 201, 202, 202L, and eight additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 117 or 121 and 151; and Computer Science 120. In addition, nursing students must take Communications 301 and Physical Therapy students must take English 285B. In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University (three years for Physical Therapy) in Philadelphia. After completing sufficient credits at Thomas Jefferson University, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, 411, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Biology Secondary Education prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the biology major (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, and one course selected from 321 or 324-324L, and nine additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; Mathematics 117 or 121, and 151; Psychology 105; Education 215, 305, 308, 309, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

The Bachelor of Science: General Science Secondary Education Major enables the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Dr. Hoffman.

The Biology Minor provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111, 112 or 105-105L, 106-106L or 105-105L, 108-108L; 212 or 215-215L; one course from 201, 222, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 19 or 20, depending on whether Biology 212 is taken. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Hoffman of the Biology Department will work with the student and the student's major advisor.

The Biology Preforestry Program offers a biology concentration in the five year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Biology Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University for the junior and senior years.* The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs.

*Physical Therapy requires two years at Elizabethtown College and three years at Thomas Jefferson University.

105* Principles of Biology

3 credits. **(The Natural World and Old Core)** Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *Corequisite: (to satisfy New Core lab requirement) Biology 105L. May not be taken for credit after completing Biology 111.* Staff.

105L* Principles of Biology Laboratory

1 credit. **(The Natural World and Old Core)** Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106 Genetics, Evolution, and Man

3 credits. **(Old Core)** Designed for the non-biology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. *Corequisite: (to satisfy Old Core) Biology 106L.* Spring semester. Staff.

106L Genetics, Evolution, and Man Laboratory

1 credit. **(Old Core)** A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106* Spring semester. Staff.

108 Man and His Environment

3 credits. **(Old Core)** Designed for the non-biology major. Discussion of basic principles of environmental interrelationships and a consideration of specific problem areas such as pollution, radiation, and population growth with regard to those principles. *Corequisite: (to satisfy Old Core) Biology 108L.* Prof. Laughlin.

108L Man and His Environment Laboratory

1 credit. **(Old Core)** Includes field trips to water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Prerequisite or corequisite: Biology 108.* Prof. Laughlin.

111* Introduction to Biological Sciences

4 credits. **(The Natural World and Old Core)** The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses beyond Biology 112. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit without the permission of instructor after completing Biology 105.* Staff.

112 General Biology

4 credits. **(Old Core)** The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology 111.* Spring semester. Staff.

201 Human Anatomy

4 credits. **(Old Core)** A study of human structure at the tissue, organ, and system levels. Particular attention is given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology 111, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. **(Old Core)** A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology 111, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. **(Old Core)** A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

212 Molecular Biology

3 credits. **(Old Core)** An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. **(Old Core)** A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor.* Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit. **(Old Core)** Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215.* Fall semester. Prof. Heckman.

222 Immunology

3 credits. **(Old Core)** A basic course encompassing immunity, serology, immunochemistry and immunobiology. Considered are antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology 112 or permission of instructor.* Spring, alternate years. Prof. Polanowski

235 General Microbiology

4 credits. **(Old Core)** A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 104 or 114, or permission of instructor.* Spring semester. Staff.

311 Biological Instrumentation and Research Methodology

4 credits. **(Old Core)** A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Staff.

313 General Ecology

3 credits. **(Old Core)** The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor.* Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. **(Old Core)** Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313.* Fall semester. Prof. Laughlin.

321 Plant Physiology

4 credits. **(Old Core)** A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 104 or 114; or permission of instructor.* Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. **(Old Core)** A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. **(Old Core)** An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. **(Old Core)** A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. **(Old Core)** Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. **(Old Core)** A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Prof. Dively.

342 Development and Evolution

3 credits **(Old Core)** A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215.* Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. **(Old Core)** A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. **(Old Core)** A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of the instructor.* Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. **(Old Core)** A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114.* Offered on demand. Staff.

370-379 Special Topics in Biology

Variable credit. **(Old Core)** Courses of a specialized nature reflecting the interests of the student and the instructor. Courses offered on a random basis. Staff.

411-412 Seminar in Biology

0 and 2 credits, respectively. **(Old Core)** An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311.* Staff.

480-489 Independent Study

Variable credit. **(Old Core)** Designed to allow the student to do independent research in some phase of biology. *Prerequisites: 16 credits in biology, permission of the instructor and Department Chair.* Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Psychology 105; corequisite: Education 308.* Fall, alternate years. Prof. Hoffman.

Department of Business

Professors Buffenmyer, Fazzi, C. Kreider
Associate Professors Evans, Gliptis, Hoppie, Neyer, Pomroy, Stone (*Chair*), Trostle
Assistant Professors Beyerlein, S. Dolan (*Associate Chair*), Hill, Moyer, Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations. The department's goal is to offer students a broad understanding of the nature of business and its role in society, and to provide the foundation for graduate study, continuing self-education, and personal development.

The Department of Business offers three majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the Core Program, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrating in one or more of six areas: *accounting, computer science/ business information systems, economics, finance, management, or marketing.* A student may also select a secondary area of concentration in *communications or international business.*

Business administration students may also major in forestry and environmental management. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Arts in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students

are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. In consultation with the department advisor, the elective courses should be tailored to the student's area of interest.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 101, BA 265, BA 330, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Accounting

A major in accounting includes Accounting 105, 106 (Ac 107-108 may be substituted), 205, 206, 305, 306, 12 additional semester hours in accounting: Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151.

Business Administration

A major in business administration includes Accounting 107, 108, (Ac 105-106 may be substituted); Business Administration 215, 248, 265, 325, 330, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration.

For an *Accounting Concentration*, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A *Computer Science/Business Information Systems Concentration* requires Computer Science 121, 135, 335, 340. An *Economics Concentration* requires Economics 301, 302, and two other economics courses. A *Finance Concentration* requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The *Management Concentration* requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 311, 498, and two other marketing courses from the departmental advising sheet.

A *Secondary Concentration in International Business* requires competency in a modern language at the 112 level, Anthropology 211, Political Science 205, Economics 307, and two other courses from the departmental advising sheet. A *Secondary Concentration in Communications* requires Communications 105, English 185, and three other courses from the departmental advising sheet.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics: Computer Science 120, Mathematics 121, 131, and 151; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may not enroll in Accounting 107 or 108 unless the faculty specifically allows them to do so. Likewise, students who complete 107 may not enroll in 105 or 106. The proper course sequence is either 105-106, or 107-108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite: Accounting 105.* Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite: Accounting 107.* Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite: Accounting 106 or permission of the instructor.* Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite: Accounting 205.* Spring semester. Prof. Fazzi.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites: Accounting 301, 206 or permission of the instructor.* Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite: Accounting 106 or 108; or permission of the instructor.* Fall semester. Profs. Beyerlein, Fazzi.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite: Accounting 305.* Spring semester. Profs. Beyerlein, Fazzi.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite: Accounting 106 or 108.* Spring semester. Prof. Neyer.

370-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite: Accounting 206.* Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite: Accounting 206.* Fall semester. Prof. Pomroy.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites: Accounting 302, 405, 406; or permission of the instructor.* Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite: approval of the department chair.* Prof. Fazzi.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites: approval of the department chair and the Provost.*

499 Seminar in Accounting

3 credits. A study of selected topics currently under discussion in the accounting field. A major research project is required. Offered upon student demand and faculty availability. *Prerequisite: permission of the instructor.* Spring semester.

Business Administration

111 Document Processing I

3 credits. A brief introduction to keyboarding with a greater emphasis upon formatting techniques utilizing the microcomputer and a word processing software application. Fall semester. Prof. C. Kreider.

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing

strategies and practices with particular emphasis on the role of marketing in business and society. *Prerequisite: or corequisite: Economics 102.* Profs. Hill, Moyer.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business: includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisites: Mathematics 151, 117.* Profs. Beyerlein, Stone, Trostle.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites: Business Administration 215 Mathematics 151.* Fall semester. Prof. Hill.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisite: Business Administration 215 or permission of the instructor.* Spring semester. Prof. Moyer.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites: Business Administration 215, 265.* Fall semester. Prof. Moyer.

316 Marketing Management

3 credits. The formulation of marketing policies and the planning techniques for embodying these policies in marketing programs. Case analysis is stressed. *Prerequisites: Business Administration 215, 248, 265.* Spring semester. Prof. Hill.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite: Business Administration 215.* Fall semester. Prof. Buffenmyer.

319 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during, and after a purchase. Emphasis is on understanding and predicting the individuals consumption patterns so that effective marketing strategies can be developed. *Prerequisites: Business Administration 215.* Fall semester. Prof. Moyer.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite: Accounting 106 or 108.* Profs. Beyerlein, Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Fall semester. Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of the instructor.* Spring semester. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Profs. Hill, C. Kreider.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites: Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

370-379 Special Topics

3 credits. Topics and problems of current relevance in business.

371 International Business Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite: Business Administration 265.* Prof. Buffenmyer.

377 Fundamentals of Materials Management

3 credits. An overview of the fields of materials management and physical distribution. Topics covered include all materials management functions; production planning and scheduling, inventory control, market analysis, materials handling, procurement transportation, warehousing and physical distribution. *Prerequisites: Accounting 108, Economics 102, Business Administration 265, Mathematics 151, or permission of the instructor.* Staff.

378 Purchasing Management

3 credits. A basic overview of the purchasing function. Topics covered include organization of purchasing, policies and procedures, sourcing, negotiations, make or buy, legal considerations, quality control, procurement of capital equipment, impact of computerization, and vendor evaluation. *Prerequisites: Business Administration 248, 331, 377; Computer Science 120; or permission of the instructor.* Offered on demand. Staff.

379 Inventory Management and Forecasting

3 credits. A conceptual foundation and understanding of forecasting methodology for the materials function in operations; various inventory management systems, considering the problems of changes and constraints on inventory structures, inventory control procedures, accounting aspects, physical control, and simulation as an inventory modeling tool. *Prerequisites: Business Administration 378, or permission of the instructor.* Staff.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite: Business Administration 325.* Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite: Business Administration 325.* Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites: Business Administration 248, 369; Economics 102.* Spring semester. Prof. Stone.

467 Personnel Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite: Business Administration 265.* Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite: Business Administration 369 or permission of the instructor.* Fall semester. Prof. Muston.

469 International Comparative Management

3 credits. A state of the art study of cross-cultural or cross-national similarities and differences of management phenomena as they reflect upon United States managers. Extensive use of primary literature sources and critical analysis of these sources will be required. *Prerequisite: Business Administration 265.* Fall semester, 1990. Prof. Stone.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite: approval of department chair.* Prof. Buffenmyer.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites: approval of the department chair and the Provost.*

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisites: senior status and permission of the instructor.* Prof. Muston.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites: Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor.* Spring semester. Prof. Moyer.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites: Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor.* Profs. Buffenmyer, Muston.

Economics

101 Principles of Economics I

3 credits. **(Old Core)** The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. Does not fulfill Core requirement for students majoring in the business department. Staff.

102 Principles of Economics II

3 credits. **(Old Core)** Topics include elasticity, consumer behavior, production costs, market structures (competition oligopoly, monopoly), and resource pricing. Does not fulfill Core requirement for students majoring in the business department. Profs. Evans, Hoppie.

301 Intermediate Microeconomic Theory

3 credits. **(Old Core)** An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Fall semester, even-numbered years. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. **(Old Core)** Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Spring semester, even-numbered years. Prof. Hoppie.

303 Money and Banking

3 credits. **(Old Core)** A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisites: Economics 101, or permission of the instructor.* Spring semester. Prof. Evans.

304 Public Finance

3 credits. **(Old Core)** An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisite: Economics 102.* Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. **(Old Core)** The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Spring semester, even-numbered years. Prof. Hoppie.

307 International Economics

3 credits. **(Old Core)** The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite: Economics 101 or permission of instructor.* Fall semester, even-numbered years. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. **(Old Core)** Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite: Economics 101 or permission of the instructor.* Fall semester, odd-numbered years. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. **(Old Core)** An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites: Economics 101, 102; Mathematics 121 or 117.* Fall semester. Alternate years. Prof. Evans.

370-379 Special Topics

3 credits. **(Old Core)** Topics and problems of current relevance in economics.

372 International Political Economy

3 credits. Topical or area studies with international dimension or

implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Fall semester. Prof. Hoppie.

480-489 Independent Study

Variable credit. **(Old Core)** Independent study and research on a problem or topic in the field of economics. *Prerequisites: approval of the department chair and the Provost.*

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite: permission of the instructor.* Fall semester. Odd numbered years. Prof. Gliptis.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology Program*), Ranck, Spangler
Associate Professors Reeder, Schaeffer (*Chair*)

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their Core Program requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations, and minors in chemistry and biochemistry.

The bachelor of Science in biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Premedical and other health professions programs are discussed on p. 63.

The bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum, the medical technology curriculum, and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, N. J.), York Hospital, Lancaster General Hospital, Abington Hospital and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the degree is granted. It is the student's responsibility to keep the Registrar's office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with the Registrar in January of the year of the clinical work.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's advisor and the department chair. Students planning much work in chemistry should consult with a departmental advisor as early as possible to plan the sequence of courses in chemistry, mathematics, physics, biology, and modern foreign language which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to ensure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-362, 461-462, 490 or 496 or 451, 491 or 497; Biology 111, 112, 324, 324L; 9 semester hours of additional biology and/or chemistry, 6 of which must be in biology; Computer Science 115; Mathematics 122; Physics 102; and Modern Language*.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 346, 343, 344, 352, 361-2, 402, 421, 461-2, 451, or 490 or 496, 491 or 497; Computer Science 115; Mathematics 222; Physics 102; and Modern Language*

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; Biology 111, 112, 222, and 235, and electives to total a minimum of 16 semester hours; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus Core Program and electives must total 100 semester hours. The clinical year includes a minimum of 28 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, 490 or 496 or 451, 491 or 497; Mathematics 122; Physics 102; two additional courses in biology or chemistry; Modern Language*

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Psychology 105; and Education 215, 305, 308, 309, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see p. 65.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 346, 352, 361-2, 461-2, 490 or 496 or 451; Computer Science 115; Mathematics 222; Physics 202; Modern Language*; and a minimum of three courses from the following: Chemistry 402, 421, 491 or 497; Mathematics 362; or any 300-400 level Physics courses.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of advanced chemistry as approved by the department faculty.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

*A modern language is defined as one taught by the Department of Modern Language at Elizabethtown College or specifically approved by the Department of Chemistry. A chemistry or biochemistry student may fulfill the Department language requirement in any one of the following ways:

- 1) Proving competence in a modern language at the 112 level by examination.
- 2) Satisfactory completion of a 112-level modern language course.
- 3) Satisfactory study of a second modern language, not previously studied by the student, as determined for each individual by the department faculty.

101* General Chemistry I

4 credits. (**The Natural World and Old Core**). An introduction to the study of the material world from a phenomenological, measurable, and observable viewpoint. Topics include elements and compounds, weight relationships, states of matter, solutions, descriptive reactivity, reaction energetics, solution equilibria, and organic and biochemical structure and nomenclature. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra*. Fall, spring semesters. Profs. Reeder, Schaeffer.

113* Organic Chemistry I

4 credits. (**The Natural World and Old Core**) The first course for those students who plan to take more than one year of chemistry. Topics include formulas, stoichiometry, bonding, geometry, equilibrium, kinetics, and instrumentation applied to carbon compounds. The importance of organic compounds across disciplines and in everyday life will be emphasized. Hours: lecture 2, discussion 1, laboratory 3. *Prerequisites: high school chemistry and algebra or equivalent*. Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. (**Old Core**) A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite: Chemistry 113*. Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or corequisite: Chemistry 114; permission of instructor*. Spring semester. Prof. Proctor.

201* General Chemistry II

4 credits. (**Old Core**) An introduction to the study of the material world from a conceptual, model building viewpoint. Topics include atomic composition and electronic structure, bonding and molecular structure, physical properties, thermodynamics, and reaction kinetics. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra*. Spring semester. Prof. Reeder.

213 Analytical Chemistry I

4 credits. (**Old Core**) Quantitative analysis emphasizing classical inorganic, gravimetric, and volumetric methods. Hours: lecture 2, laboratory 6. *Prerequisite: Chemistry 114 or equivalent*. Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. (**Old Core**) A continuation of Chemistry 213, with added emphasis on instrumental methods and computer applications. Hours: lecture 3, laboratory 6. *Prerequisite: Chemistry 213 or equivalent*. Spring semester. Prof. Hedrick.

242 Chemical Equilibrium and Kinetics

3 credits. (**Old Core**) Thermodynamics as applied to chemical equilibria in ideal and nonideal, homogeneous, and heterogeneous systems. Kinetics, ionic solutions, and electrochemistry are also treated. *Prerequisite:*

sites or corequisites: *Chemistry 214, Mathematics 122, Physics 102*. Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. **(Old Core)** The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites: Chemistry 213 and Biology 112 or equivalent*. Fall semester. Prof. Spangler.

324 Biochemistry II

3 credits. **(Old Core)** A continuation of Chemistry 323. *Prerequisite: Chemistry 323*. Spring semester. Prof. Spangler.

326 Techniques of Biochemistry I

1 credit. **(Old Core)** Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite: Chemistry 323*. Fall semester. Prof. Spangler.

327 Techniques of Biochemistry II

1 credit. **(Old Core)** A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite: Chemistry 326; corequisite: Chemistry 324*. Spring semester. Prof. Spangler.

343 Atomic Structure (Physics 221)

3 credits. **(Old Core)** Twentieth-century developments in the structure of the atom. Topics include X-rays, radioactivity, atomic spectra, blackbody radiation, introduction to quantum theory emphasizing the extranuclear structure of the atom, elementary particles, nuclear structure, and transformations. This course is the same as Physics 221. Hours: lecture 3. *Prerequisite: Physics 102, Mathematics 122*. Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. **(Old Core)** An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite: Chemistry 343*. Spring semester. Prof. Ranck.

346 Atomic Structure Laboratory (Physics 221L)

2 credits. **(Old Core)** Experiments relating to the atomic nature of matter and the interaction of radiation with matter. Introduction to special computational techniques appropriate for the experiments. Hours: laboratory 6. *Corequisite: Chemistry 343*. Fall semester. Prof. Ranck.

352 Advanced Chemistry Laboratory I

3 credits. **(Old Core)** Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite: Chemistry 344*. Spring semester. Prof. Ranck.

361, 362 Chemistry Seminar I, II

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 362. Hours: seminar 1 (Fall), seminar 1 (Spring). Prof. Schaeffer.

370-379 Special Topics in Chemistry

Variable credit. **(Old Core)** Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites: permission of instructor and department chair*. Staff.

402 Advanced Inorganic Chemistry

3 credits. **(Old Core)** A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite: Chemistry 344*. Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. **(Old Core)** A study of organic reactions based on experimen-

tal and advanced theoretical studies. *Prerequisite: Chemistry 344*. Fall semester. Prof. Spangler.

451 Advanced Chemistry Laboratory II

4 credits. **(Old Core)** Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite: Chemistry 242*. Fall semester. Prof. Schaeffer.

461, 462 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 462. Hours: seminar 1 (Fall); seminar 1 (Spring). Fall, spring semester. Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control. *Clinical Chemistry*—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

490-495 Research in Chemistry

Variable credit. **(Old Core)** An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor*. Staff.

496-499 Independent Problems in Chemistry

Variable credit. **(Old Core)** An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor*. Staff.

Education 305 Practicum in Secondary Education: Science

3 credits. Teaching science in secondary schools. *Prerequisite: Psychology 105; Corequisite: Education 308*.

Department of Communications

Professor Moore (*Chair*)

Associate Professor Smith (*Acting Chair, 1990-91*)

Assistant Professors Byrne, Dominas, Ellis, Severeid,
Wennberg

Instructor Bousliman

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the local access cable television production facility, ECTV, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, International Association of Business Communicators (Elizabethtown College Chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 41 credit hours required for a Bachelor of Arts degree with a *communications major* include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 225, 248, 485; Computer Science 120 (Introduction to Computer Processing for the Macintosh), and 15 credit hours in a concentration. All majors are strongly encouraged to complete a minor area of study chosen in consultation with their advisor. Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their

general preparation into a specific area of career interest. The minor allows for complementary preparation in another discipline. Prior to preregistration for the junior year, the student must elect a communications concentration which requires 15 credit hours. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student to design, produce, and manage a variety of internal/external communications functions for business, industry, and other institutions. The student is required to complete Communications 315, 348 and three electives to be chosen from the following: Communications 301, 304, 316, 321, 336.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are Communications 311, 351, 412, and two electives to be chosen from the following: Communications 301, 304, 314, 316, 348, 422.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcasting and journalism. Required are Communications 311, either 314 or 316 and three approved electives to be chosen from the following: Communications 304, 314, 316, 321, 336, 411, 422.

A minor in communications is offered to students majoring in other departments. The minor permits a student to reach a level of competency in written, spoken, and visual communications to complement their primary area of preparation. The 25 credit hours required for a minor in communications include Communications 109, 115, 125, 225, 205 (repeated for two semesters), Computer Science 120 (Introduction to Computer Processing for the Macintosh), and 9 credit hours of approved departmental electives at or above the 200 level.

No more than 57 credits in Communications may be counted toward graduation.

Admission Requirements for Communications Majors and Minors

Before being accepted into the major or minor, all students must demonstrate competency in language usage, keyboarding, and speaking. Language usage competency is determined by a placement test at the time of declaration. Students performing below C level are not permitted to be a declared major or enroll in courses beyond the 100 level. The test may be retaken once. Individuals who have not earned a C or better in a high school or equivalent typing course or pass a typing placement test at the time of declaration are placed by the department in a keyboarding course. Students who have not earned a C or better in a high school speech course must enroll in Com 105 Basic Speech. All students must have a 2.0 GPA to declare the major or minor and enroll in any courses above the 100 level.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practica often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practica are not repeatable and may count as elective credit within the major. Internship credits count only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 150 opportunities already negotiated with regional communications organizations.

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 225, 315, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the College.

105 Basic Speech

3 credits. Basic instruction in developing poise and confidence in speaking. Emphasis is placed on verbal and nonverbal communication, research, outlining, speech preparation, use of visual aids, and the rudiments of group dynamics and discussion. Staff.

109 Communications Theory

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on several levels, individual, interpersonal, and mass, examining such aspects as speech production, sender/receiver relationships, listening, nonverbal communication and the use of symbols. Students explore mass media from a human communication perspective. Profs. Bousliman, Ellis.

115* Media and Society

3 credits. **(The Social World)** The course is an introductory examination of the structures, functions, political, social, and economic impacts of mass media in the U.S. A goal is to help make students critical and analytical consumers of the mass media, including: newspapers, books, magazines, radio, television, film, public relations, and advertising. Satisfies the Core Social World Area of Understanding. Prof. Moore, Ellis.

125 Introduction to Media Production

3 credits. The course provides the design, theory and development of production skills and techniques for a variety of audio-visual materials, photography, and print materials. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials. Elements of desktop publishing are included. *Pre/corequisite Computer Science 120.* Prof. Wennberg.

205 A—D Applied Communications

.5 credit. Four semesters of participation in approved cocurricular activities is required of all majors. All participants must meet the standards of the activity in order to count toward meeting the requirement. Of the four semesters of participation, three must be in different, approved activities. These include: a. WWEC-FM, b. Forensics, c. *Etounian and Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any two activities. Enrollment is open only to communications majors or minors. A student may enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. *Graded Pass/Fail.* Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisites: Communications 105 or 109.* Profs. Bousliman, Ellis, Smith.

225 Audio/Visual Production

3 credits. Students learn the basics of audio and video theory, production, and practice. Audio forms, methods, and aesthetics of audio composition, scriptwriting, and production are emphasized in one half of the course. The other portion of the course examines video theory, writing for the visual medium, and production of video projects. *Prerequisite: Communications 125.* Profs. Smith and Staff.

248 Communication Law and Issues

3 credits. An examination of the law of the field of communications as well as its history and effects. Current ethical issues are explored through case studies. *Prerequisite: Communications 115 or permission of instructor.* Prof. Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. *Prerequisite: Communications 105 or 109 or permission of instructor.* Fall semester. Prof. Bousliman.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. *Prerequisite: Communications 105 or 109 or permission of the instructor.* Spring semester, odd numbered years. Prof. Bousliman.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of the instructor.* Prof. Byrne, Staff.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites:* For majors: *Communications 311 or permission of the instructor.* For Professional Writing students: *two Professional Writing courses and permission of the instructor.* Spring semester, odd numbered years. Prof. Byrne.

315 Graphic Images

3 credits. The course provides the theory, design, and development of production skills in a variety of graphic images, both print and projected. A foundation is given in the preparation of brochures, newsletters, special interest publications, side graphics and multi-image. Elements of desktop publishing are included as well as traditional methods of production. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials. *Prerequisites:* *Communications 125, 225.* Spring Semester. Prof. Wennberg.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, editing copy, continuity, and news for radio and television. *Prerequisite:* *Communications 225, 235, 311, or permission of instructor.* Spring semester. Prof. Smith.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites:* *Communications 225 and 235.* Fall semester, even numbered years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites:* *Communications 125 and 225. Communications 205D (ECTV) may be a corequisite.* Spring semester. Staff.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisite:* *Communications 125, 225, or permission of instructor.* Fall semester. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite:* *Communications 311 or permission of instructor.* Fall semester. Prof. Byrne.

370-379 Special Topics

Variable credit. Periodic offerings of the Department or directed study in topics of special interest to advanced majors. Staff.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. *Prerequisites:* *Communications*

115, 125, 225, or permission of instructor. Fall semester, even numbered years. Staff.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite:* *Communications 351.* Spring semester. Prof. Byrne.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisite:* *Communications 225, 248.* Fall semester, odd numbered years. Staff.

470-479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professionals in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisite:* *Practicum—at least junior standing; is taken with a campus-based sponsor for elective credit in the major; may not be repeated. Internship—senior standing, for at least 12 credits and a 2.70 GPA and a 3.0 GPA in the major; Must be taken full-time for an entire semester off campus, and used only as free elective..* Profs. Moore, Byrne.

480-489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites:* *at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite:* *senior standing.* Profs. Ellis, Moore, Wennberg.

Department of Computer Science

Professor C. Kreider

Associate Professors Leap (*Chair*), Tulley

Assistant Professor Bina

Instructor Evans

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon.

Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *three majors*—one in *computer science*, one in *computer science/business information systems*, and another in *computer engineering*, which is offered in conjunction with the Department of Physics. All three majors provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 8250 cluster is used primarily for administrative purposes. The VAX 11/780, is dedicated to academic use.

The College also has available for student use a variety of micro and personal computers. These include Apple, IBM, and Zenith computers. Interconnection between the computers is provided.

The computer science department maintains an Intel 80386/33 based multiuser timesharing computer system running the UNIX operating system. This system is housed in the department's computing laboratory along with a number of other 80386 and 80286 based PC's. The department also maintains a computer interfacing and electronics designed laboratory.

The department strongly recommends that students purchase their own IBM-compatible personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase Zenith, IBM and Apple PC's at excellent prices. Students can also build their own personal computer as part of several computer science courses.

Major software systems available on the computers include most major computer languages (Ada, BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, Dbase III+, Lotus 1-2-3, and WordPerfect); both CODASYL network type and relational data base management systems; and a screen forms management system. The College has several word processing packages in use.

All computer science majors and students enrolled in courses requiring use of the VAX computer are assigned

individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses, including Computer Science 121, 122, 221, 222, 332, 341, and 490.

The computer science major is further required to take Computer Science 321, 322, and either 421 or 422, plus nine credits of computer science electives; Mathematics 121, 122, 151, 201, and either 222 or 252; and an area elective which consists of four courses in one area other than computer science. Area elective courses may not be chosen from among those required for or elected to meet Core or international studies requirements and must be approved by the computer science faculty advisor. A minor in another field also satisfies this area elective requirement.

The computer science/business information systems major is further required to take Computer Science 135, 335, 409, and nine credits of computer science electives; Mathematics 117, 151; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The computer engineering major requirements are specified under the Department of Physics.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of an appropriate programming language, data representation, file handling, and the use of subprograms. (Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor). Prof. Reeder.

120 Introduction to Micro Computer Applications

3 credits. An overview of computer concepts, uses, and issues. Software packages and computer applications (database, spreadsheet, and word processing) are a major component. Staff.

121 Computer Science I

1 or 3 credits. The introductory concepts of computer organization, data representation, algorithmic development and structured programming. Operating systems and Input/Output devices are covered as they relate to the user. The student is expected to master the fundamentals of a high-level programming language. *Prerequisites: high school algebra and trigonometry.* (Students who have successfully completed Computer Science 115 will receive one credit for this course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis recursion, internal sort/search methods, string processing, simple data structures and file processing. Assembly language concepts and internal operations of the C.P.U. are introduced. *Prerequisite: Computer Science 121.* Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Staff.

221 Algorithms and Data Structures

3 credits. Methods for structuring data and the algorithms for handling them are developed. Topics include abstract data types, including stacks, queues, linked lists, trees, and storage allocation and management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. Fall semester.

322 Formal Languages

3 credits. The theoretical and practical analysis of the syntax of programming languages. Topics include the concepts and terminology associated with grammars, finite state machines, and parsing by recursive descent. *Prerequisites: Computer Science 221, 321.* Spring semester. Prof. Tulley.

332 Computer Organization

3 credits. Introduction to Boolean algebra, logic circuit and design, and their use in computer architecture. Basic parts of computer systems are studied, including storage, control, and input/output systems. *Prerequisite: Computer Science 222.* Fall semester. Prof. Bina.

333 Computer Systems Interfacing

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. Prof. Leap.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite: Computer Science 135.* Prof. Leap.

340 Business Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, software applications, and information; systems design; and an investigation of information systems of the various functional areas within the organization. *Prerequisites: Computer Science 120 or 121; Business Administration 215, 265.* Spring semester. Prof. Kreider.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisites: Computer Science 121 and either 122 or 135.* Fall semester. Prof. Evans.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed

in higher-level languages as well as a specialized simulation language. *Prerequisites: Computer Science 221; Mathematics 151; or permission of instructor.* Fall, alternate years. Prof. Tulley.

361 Computer Graphics

3 credits. Introductory concepts of computer graphics, including hardware, software, data storage and man/machine interaction. The student is expected to become conversant with computer graphics hardware and be able to create software to provide the interactive generation of graphical output. *Prerequisites: Computer Science 221 and Mathematics 201.* Fall semester. Prof. Bina.

362 Comparison of Programming Languages

3 credits. Comparative study of programming language concepts including data objects and data types, scope, procedures, abstraction mechanisms, sequence control, exception handling and concurrency, providing a framework for understanding language design. Intended to provide the necessary tools for critically evaluating existing and future languages and language constructs. *Prerequisite: Computer Science 221.* Prof. Tulley.

370-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite: permission of instructor.* Staff.

409 Data Base and Information Systems

3 credits. A study of information systems design and data base management techniques. Topics include information retrieval theory, data base design, data models, maintenance, file security, data reliability, CODASYL recommendations on DBMS. *Prerequisites: Computer Science 335 and either Computer Science 221 or permission of instructor.* Spring semester. Prof. Evans.

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers, interpreters, and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites: Computer Science 222, and either Computer Science 322 or permission of the instructor.* Fall semester. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, device drivers, and interrupt handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites: Computer Science 332.* Spring, alternate years. Prof. Bina.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite: approval of the computer science faculty.* Prof. Leap.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite: approval of the computer science faculty and Provost.* Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal and a final report and defense of work. *Prerequisites: junior or senior status and permission of instructor.* Staff.

Earth Science

See Department of Physics, page 52.

Department of Education

Professor Rice

Associate Professors Bartoli, Blue, Boothby, Fox,
Orlando (*Chair*)

Assistant Professor Bauman

Bachelor of Science

The department offers three major certification programs—Early Childhood (N-3), Elementary (K-6), and Secondary (7-12)—combining a strong liberal arts education with the development of high professional competence. Complementing the Core Program and, in secondary certification, the student's academic major, the certification programs bring together in a creative way the student, the school, and the subject to be taught. The department further stresses the importance of supervised field experiences which complement on-campus courses in education.

Admission to Teacher Education Program

All applicants must meet the qualifying criteria and file a written application for admission to the Teacher Education Program prior to enrollment in any education course beyond Ed 205. They also meet the qualifying criteria of the Department of Education: proficiency in English and speech, good physical and mental health, a grade point average of at least 2.0, approval of the Office of College Life, satisfactory evaluation and recommendation by the faculty or faculty members of the Department of Education and approval by the major department of prospective secondary school majors.

Note: Students who fail to meet these criteria as applicants, or who later fail to maintain satisfactory progress, are counseled out of the program and directed into other areas of endeavor.

Progress Toward Program Completion

1. Students are evaluated at the conclusion of each semester after admission into the program, and may be advised to withdraw at any time the department determines that withdrawal is in the best interests of the student, the program, and the College.
2. A grade point average of 2.0 is required for enrollment in any Education course except Ed 205, Ed 215, and Ed 225.
3. Any grade below C in the teaching major after completion of the 100-level courses will disqualify a student from

certification.

4. Students should apply for certification during the semester in which they will graduate. Should they apply after they have graduated, they must satisfactorily complete whatever additional requirements are then in effect before they can receive certification.

Certification Program Requirements

The Secondary Certification Program (accompanied by the bachelor of arts or bachelor of science degree, depending on the student's academic major):

- A. Academic major as outlined by each program area which supports a certification program: English, Mathematics, Science (Biology, Chemistry, Physics, and General Science), Social Studies.
- B. Professional education requirements: Education 215, 305, 308, 309, 415, 473.
- C. Satisfactory completion of the NTE Testing Program, Basic Skills and General Knowledge Test, prior to enrolling in Education 305.

The Elementary Education Major (bachelor of science degree):

- A. Professional education requirements: Education 205, 225, 226, 227, 235, 255, 325, 335, 355, 356, 365, 472, 490-498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305, and Psychology 105.
- B. Electives
- C. Satisfactory completion of the NTE Testing Program, Basic Skills and General Knowledge Test, prior to enrolling in Education 225, 235, 255.

The Early Childhood Education Major (bachelor of science degree):

- A. Professional education requirements: Education 205, 225, 226, 227, 235, 255, 315, 320, 325, 335, 356, 365, 471, 490-498 (3 credits); Mathematics 211, 212; Physical Education 285; Music 305, and Psychology 105.
- B. Electives
- C. Satisfactory completion of NTE Testing Program, Basic Skills and General Knowledge Test, prior to enrolling in Education 226, 235, and 255.

205 Foundations of Education

4 credits. A study of some of the historical, philosophical, sociological, and psychological foundations of education. *Prerequisite:* Psychology 105.

215 Introduction to Secondary Education

3 credits. Introduces perspective secondary teachers through a historical, philosophical, psychological, sociological and legal perspective to the development of secondary education and to major issues of multicultural/multiethnic, bilingual, mainstreaming, sexism, student rights, teachers' roles and rights, government and control, and the "excellence" movements in Education. *Prerequisite:* Psychology 105.

rights, teachers' roles and rights, government and control, and the "excellence" movements in Education. *Prerequisite: Psychology 105.*

225 Child Development

4 credits. Study of development from birth to age eleven and of educational implications of developmental theories. A weekly field experience allows for the application of observation techniques and child development knowledge. *Prerequisite: Psychology 105.*

226 Media and Practicum

1 credit. *Instruction in media*, with a pre-school or elementary classroom experience. *Corequisite: Education 235, 255.*

227 Media and Practicum

2 credits. *Instruction and application of media*, including computers, with a pre-school or elementary classroom experience. *Corequisite: Education 225, 235, 255, 256, 365.*

235 Fundamentals of Reading Instruction

3 credits. The systematic assessment and teaching of the basic reading skills: word recognition, word analysis, and comprehension skills. *Prerequisite: Education 205; corequisites: Education 226, 255.*

255 Children's Literature

3 credits. A study of representative works from the field of children's literature. (*Corequisites: Education 226, 235.*)

305 Practicum in Secondary Education

4 credits. The instructional methodology of an academic discipline is integrated with in-school experience under the guidance of a clinical professor in the academic major: biology, chemistry, English, mathematics, physics, general science, or social studies. *Prerequisite: Psychology 105; corequisite: Education 308.*

308 Media and Practicum

1 credit. *Instruction in media*, with a secondary school classroom experience. *Corequisite: Education 305.*

309 Media and Practicum

1 credit. *Instruction and application of media*, with a secondary school classroom experience. *Corequisite: Education 415.*

310 History of Science

1 credit. A study of developments in science from the ancient Greeks to the twentieth century. *Prerequisite: permission of instructor.* Prof. Hoffman.

315 Early Childhood Education

4 credits. A study of programs for young children with regard to theoretical base, curricular goals, teacher role, physical environment, and program sponsorship. On-campus study is coordinated with experiences of observing and analyzing a variety of early childhood programs. *Prerequisites: Education 225, 235, 255.*

320 Special Methods in Early Childhood Education

4 credits. A study of developmentally appropriate procedures and materials for the preschool child, emphasizing the importance of play in early childhood programs. On-campus study is coordinated with a practicum in a preschool classroom. *Prerequisite: Education 315; corequisites: Education 325, 335, 356, 365.*

325 Science for Early Childhood Elementary Education

3 and 3 credits, respectively. A study of science concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); 315 (early childhood); corequisite: Education 227.*

335 Mathematics for Early Childhood Elementary Education

3 and 3 credits, respectively. A study of mathematics concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); Education 315 (early childhood); corequisite: Education 227.*

355 Language Arts and Communication for Elementary Education

3 credits. A study of concepts, procedures and materials for language arts, including listening and writing for the elementary child. *Prerequisite: Education 235; corequisite: Education 227.*

356 Language Arts and Reading for Early Childhood/Elementary Education

3 and 3 credits, respectively. A study of concepts, procedures, and materials for language arts and reading for the elementary child. *Prerequisite: Education 235; corequisite: Education 227.*

365 Social Studies for Early Childhood/Elementary Education

3 and 4 credits, respectively. A study of social studies concepts, procedures, and materials for the preschool and elementary child. *Prerequisite: Education 235 (elementary); 315 (early childhood); corequisite: Education 227.*

371-380 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite: permission of instructor.*

415 Topics in Secondary Education: Reading

2 credits. *Theory and practice of secondary education*, with emphasis on developmental reading and reading in the content area. *Prerequisite: Education 305; corequisite: Education 309.*

471 Professional Internship, Early Childhood Education

16 credits. Student teaching in an early childhood classroom. *Prerequisites: Education 320, 325, 335, 356, 365.*

472 Professional Internship, Elementary Education

16 credits. Student teaching in an elementary classroom. *Prerequisites: Education 325, 335, 355, 356, 365.*

473 Professional Internship, Secondary

14 credits. Student teaching in a secondary classroom. *Prerequisite: Education 305; corequisite: Education 309, 415.*

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

490-498 Special Topics

Variable credit. Courses designed to give students opportunity to pursue work in an area of major interest in such topics as art in the elementary school, creativity, computers in education, children's literature, developmental reading, learning disabilities, gifted and talented education.

Department of English

Professors Campbell (*Chair*), Dwyer
Associate Professors Rohrkemper, Sarracino
Assistant Professors Hergert, Martin, Mead, Shumaker

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary

studies is the fundamental aim of the Core Program and of the rigorous and comprehensive concentrations which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The English major requires 42 hours.

The literature concentration requires English major courses 301, 394 and one course in literary forms (English major courses with middle digit 1); three courses in literary movements (English major courses with middle digit 2); one course in individual authors (English major courses with middle digit 3); two courses in American Literature (English major courses with middle digit 4); and an additional 15 hours of electives in English (excluding English core courses).

The professional writing concentration requires English 185, 301, 393; Communications 125; Computer Science 120; one English major course with middle digit 1; two English major courses with middle digit 2; one English major course with middle digit 3; one English major course with middle digit 4; and 15 hours in writing electives to be selected from English and Communication writing courses: English courses with middle digit 8 (no more than two courses from English 285A/B/C/D), English 311, and Communications 311, 314 (no more than one course and not necessarily either).

The secondary education concentration requires English 100, 105, 185, 301, 306; one English major course with middle digit 1; one English major course with middle digit 2; one English major course with middle digit 3; two English major courses with middle digit 4; one English course from 381, 382, 384; an additional 9 hours of electives in English major courses; Psychology 105; and Education 215, 305, 308, 309, 415, 473.

The Department of English offers a *minor* consisting of 24 hours and distributed as follows: English 105, 185; one course with the middle digit 1, one course with the middle digit 2, one course with the middle digit 3, and one course with the middle digit 4; and two courses from the remainder of the Department's offerings (excluding English 100, 150, 306). Students must apply for acceptance to the minor no later than the beginning of their junior year (at the completion of 60 credits).

011 Fundamentals of Composition

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. *Credits are not applicable to the 125 required for graduation.* Staff.

100* Writing and Language

3 credits. **(Power of Language)** A writing course focusing on writing as a process of discovery of ideas, drafting, revision, and editing. Students read, write, and speak about a variety of aspects of the power of language. Assignments may include but are not limited to linguistic analysis, history of the language, and the analysis of language in and out

of contexts. Topics include writing and literature, writing and persuasion, and writing and society. Staff.

105* Introduction to Literature

3 credits. **(Cultural Heritage and Old Core)** A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature, and to provide the necessary background for upper-level literature courses. Readings are drawn from major authors such as Homer and Shakespeare. Prerequisite to all literature courses. Staff.

110* Literature: Expressive Form

3 credits. **(Creative Expression)** How different forms of literature produce different aesthetic experiences and responses. The course will focus on a specific theme such as war, the self, the family, or contemporary culture to make comparisons between genres more obvious. Poetry, drama, short stories, essays, films, and novels are possible genres for consideration. Staff.

113* Drama: Motive and Character

3 credits. **(Value and Choice)** The analysis of character and motive in 8-10 plays. A psychological approach will emphasize how actions and words reveal personality. Staff.

115* The Lyric Tradition

3 credits. **(Cultural Heritage)** The Lyric Tradition: a study of the English and American lyric from Old and Middle English through the Renaissance, 18th, 19th, and 20th Centuries up to the present day. Staff.

116* Film as Literature

3 credits. **(Creative Expression)** An introduction to film as an art form with particular attention to the discourse of film: how film "speaks" to us; how we speak about film. Staff.

135* Shakespeare Through Performance

3 credits. **(Creative Expression)** Students gain a deep critical and imaginative understanding of Shakespeare's plays and a knowledge of the Elizabethan theatre and its stage conventions by reinforcing textual analysis with informal performance of scenes from several key works. Staff.

150 Advanced Writing and Language

3 credits. A writing course designed to explore the writing process while studying the history of the English language, its past and present uses and powers. Students will be writing, reading, and speaking about a variety of aspects of the history and power of language. Assignments may include but are not limited to linguistic analysis, history of the language, de-constructive techniques, and the analysis of language in and out of contexts. *May not be taken in addition to English 100.* Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisite: permission of the instructor.* Prof. Rohrkemper.

285A/B/C/D Writing in the Professions

3 credits. A study of the range of writing and research typically produced in specific professional areas so that students gain a sense of the constraints that govern their style, content, and audience. Students will practice writing and analyzing these forms of writing regularly. *Prerequisite: permission of instructor.* Prof. Mead.

285A	Writing for Science and Technology
285B	Writing in the Health Professions
285C	Writing in the Social Sciences
285D	Writing for Government and the Judicial Systems

301 History of the English Language

3 credits. A combination of a history of language and an introduction to linguistics related to literature, stylistics, and composing. Profs. Martin, Mead.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and/or the Learning Center. *Prerequisite to professional semester.* Prof. O'Donnell.

311 Autobiography

3 credits. A critical study of this literary form of non-fiction writing and instruction in writing autobiographically. Professional writing majors may use this course to fulfill either the literature or the upper-level writing requirement. Prof. Mead.

312 English Drama Before 1900

3 credits. (Old Core) A study of representative English plays, excluding Shakespeare, from the Middle Ages to the twentieth century, emphasizing Elizabethan and Jacobean drama. Fall semester, alternate years. Prof. Martin.

313 Modern Drama

3 credits. (Old Core) A study of drama from the realism of Ibsen through naturalism, expressionism, and symbolism to the current avant garde theatre. Spring semester. Prof. Campbell.

314 The English Novel Before 1900

3 credits. (Old Core) A study of selected masterpieces from Defoe to Hardy as works of prose art and as turning points in the development of the form. Fall semester, alternate years. Prof. Campbell.

317 Modern Novel

3 credits. (Old Core) A study of the work of major novelists of the twentieth century with emphasis upon the development of the novel as an art form. Fall semester, alternate years. Prof. Rohrkemper.

318 Modern Poetry

3 credits. (Old Core) A study of at least three major twentieth-century poets as well as selections from writers who have published within the last thirty years. Spring semester. Prof. Dwyer.

320 Concepts of the Renaissance

3 credits. (Old Core) A study of the "ruling ideas" of the Renaissance in Britain; representative nondramatic writers with an emphasis on Spenser and lyric poetry. Fall semester, alternate years. Prof. Martin.

322 The Seventeenth Century

3 credits. (Old Core) A study of the major nondramatic writers, excluding Milton, from 1600 to 1660: among them, Donne, Jonson, Herbert, and selected prose writers. Spring semester, alternate years. Prof. Martin.

323 The Restoration and Eighteenth Century

3 credits. (Old Core) A study of poetry and prose from 1660 to 1800, with an emphasis on Dryden, Swift, Pope, Sterne, and Johnson. Fall semester, alternate years. Prof. Dwyer.

327 The Romantic Movement

3 credits. (Old Core) A study of selected poetry and prose most significantly embodying the central concepts and achievements of English Romanticism. Fall semester, alternate years. Prof. Dwyer.

328 The Victorian Period

3 credits. (Old Core) A study of selected poetry and prose from Tennyson to Hardy, particularly emphasizing the changing response of the artist to the conflicts stemming from the industrialization of the period. Spring semester, alternate years. Profs. Sarracino, Shumaker.

329 Modern British Literature

3 credits. (Old Core) A study of poetry and prose from the end of the nineteenth century to the middle of the twentieth, with an emphasis on the development of a modern aesthetic in the works of such writers as

Conrad, Yeats, Joyce, Lawrence, Woolf, and Auden. Fall semester, alternate years. Profs. Rohrkemper, Shumaker.

331 Chaucer

3 credits. (Old Core) A study of representative works of Chaucer. Spring semester, alternate years. Prof. Martin.

332 Shakespeare

3 credits. (Old Core) A study of representative works of Shakespeare. Spring semester, Profs. Campbell, Martin.

333 Milton

3 credits. (Old Core) A study of representative works of Milton. Spring semester, alternate years. Prof. Martin.

337 Eighteenth Century English Authors

3 credits. (Old Core) A study of representative works of one or two major authors such as Pope, Swift, Fielding, and Goldsmith. Spring semester, alternate years. Prof. Dwyer.

338 Nineteenth Century English Authors

3 credits. (Old Core) A study of representative works of one or two major authors such as Blake, Keats, Dickens, and Hardy. Fall semester, alternate years. Profs. Campbell, Shumaker, Staff.

340 The American Romantic Movement

3 credits. (Old Core) A study of American Transcendentalism, including its sources, and of major figures of the period such as Hawthorne, Melville, Whitman, Emerson, and Thoreau. Alternate years. Prof. Sarracino.

341 The Rise of Realism in American Literature

3 credits. (Old Core) A study of American literature in the late nineteenth and early twentieth centuries, with emphasis on such writers as Dickinson, Clemens, Robinson, Frost, Dreiser, and Fitzgerald. Spring semester, alternate years. Prof. Sarracino.

342 Experiments in American Literature

3 credits. (Old Core) A survey of major American writers of the twentieth century, authors such as Pound, Eliot, Faulkner, Williams, Stevens, Stein, and Hemingway. Fall semester, alternate years. Prof. Rohrkemper.

343 American Authors

3 credits. (Old Core) A study of the writings of one or two American authors such as Melville, James, Whitman, and Faulkner. Spring semester, alternate years. Profs. Rohrkemper and Sarracino.

352 The Fantastic in Literature

3 credits. (Old Core) A study of major works of fantasy (Alice in Wonderland, The Hobbit, The Golden Key, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic" Fall semester, alternate years. Prof. Sarracino.

357 Women and Literature

3 credits. (Old Core) A study of the effects on women writers and readers of a male dominated literary tradition. Alternate years. Prof. Shumaker.

370-379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/ faculty interest. Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite: permission of instructor.* Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and

including instruction in oral and graphic presentations of technical information. *Prerequisite: permission of instructor.* Staff.

383 Managerial Communication

3 credits. A course emphasizing the concerns of administrative writers and including instruction in oral and graphic communication of business information. *Prerequisite: permission of instructor.* Staff.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course instructing students in advanced writing and professional editing. *Prerequisite: English 185 and permission of instructor.* Prof. Mead.

385 Writing for Publication

3 credits. Advanced study of copy editing and of techniques for promoting one's own manuscripts. Staff.

393 Senior Writing Seminar

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisite: Professional Writing Concentration or permission of instructor.* Alternate years. Prof. Mead.

394 Senior Seminar in Literary Criticism

3 credits. A seminar for literature majors on the history of literary theory and criticism. *Prerequisites: English Literature concentration, or permission of the instructor.* Fall semester, alternate years. Prof. Dwyer.

470-479 Internships

1-3 credits. On-campus internships may be requested in the student's sophomore, junior, or senior year. Off-campus internships are for students proven competent in on-campus internships or judged as having special aptitudes for the specific internship. Prof. Mead.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite: Psychology 105; corequisite: Education 308, 309.* Prof. O'Donnell.

Department of Fine and Performing Arts

Professors Harrison (*Chair*), Kitchen, Libhart
Associate Professors Douglas, Stites
Assistant Professors Friedly, Kiser, Palmquist,
Rohrbacher

Bachelor of Arts; Bachelor of Science

The department offers three majors which lead to the degree of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, or Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theatre. Minors are offered in Visual Art, Music, and Fine and Performing Arts. The music programs are fully

accredited by the National Association of Schools of Music.

Fine and Performing Arts

The *minor in The Fine and Performing Arts* is intended for those students with a broad *interest* in the Arts; it does not necessarily demand a *skill* in any particular arts area. The minor includes one introductory course with an academic emphasis and one with an experiential emphasis in each discipline. The capstone course, with an emphasis on criticism, integrates the disciplines. Required courses are Art 155; Mu 105; Th 105; Da 101; Art 101 or 106; Mu 115 or 101-103; Th 155 or 165; FAPA 455, The Arts in America Today (not offered in 1990-91). The FAPA minor totals 22 credits.

Visual Arts

The academic and the practical courses in the visual arts program aim to refine students' creative potential, expand their judgment of the visual arts, and discern the contrasts and relationships among the arts of our Western culture and those of non-Western traditions.

Minor in Visual Arts. The minor in Visual Arts requires Art 105, 106 or 220, 155, 203 or 324, and six hours of electives in visual arts courses. Communications 315 may be one of the elective courses.

105* Drawing I

3 credits. (**Creative Expression and Old Core**) Theory and application of two-dimensional design principles in a variety of drawing mediums, with an emphasis on the exploration of various aesthetic possibilities. Prof. Friedly.

106 Ceramics I

3 credits. (**Old Core**) An introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

155* Introduction to Art

3 credits. (**Cultural Heritage and Old Core**) A comparative approach to works of the modern epoch, selected from both Western and non-Western traditions. Prof. Libhart.

203 Twentieth Century American Art

3 credits. (**Old Core**) An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. Studio easel painting in opaque media, with stress on pictorial organization and application of color theories. *Prerequisite: Art 105 or permission of the instructor.* Staff.

206 Ceramics II

3 credits. An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite: Art 106.* Prof. Friedly.

220 Sculpture

3 credits. (**Old Core**) An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and

instruction in the use of the sculptor's materials and techniques. Prof. Friedly.

324 American Arts/Crafts

3 credits. **(Old Core)** A comprehensive scan of the fine and decorative arts of the United States from Colonial beginnings to the present, citing their derivation from social, ethnic, and aesthetic influences. Prof. Libhart.

351 Printmaking

3 credits. Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite:* Art 105 or the permission of the instructor. Prof. Friedly.

Dance

DA 101* Interpretive Movement

1 credit. **(Physical Well Being and Old Core)** Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Staff.

DA 102* Introduction to Ballet

1 credit. **(Physical Well Being and Old Core)** Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Staff.

Music

The music courses are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained at the department office.

The department has adopted requirements for junior standing for music majors. A copy of these requirements is available in the department office.

The music education major requires Music 100, 101, 102, 103, 104, 105, 201, 202, 203, 204, 231, 234, 237, 238, 301, 311, 312, 321, 322, 343, 344, 415 or 417, 440, 441, 442, 471, a minimum of twelve hours of applied music instruction, a minimum of eight credit hours in ensemble participation, a senior recital, and either Education 205 or 215.

The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 100, 101, 102, 103, 104, 105, 141, 150, 151, 201, 202, 203, 204, 231, 234, 237, 252, 301, 311, 321, 343, 353, 354, 415 or 417, 440, 441, 442, 455, 456, 473, 474, 475, 476, 477, 478, 479, three hours of music elective, a minimum of twelve semester hours in

applied music instruction, a senior recital, and a minimum of six hours credit in ensemble. A six-month internship in an approved clinical facility is required for the music therapy degree and is taken after the completion of the four-year music therapy program.

The music therapy program is approved by the National Association for Music Therapy and the National Association of Schools of Music.

In order to graduate as a music therapy or music education major, a student must maintain the following standards:

(1) *A music therapy major* must earn a grade of C- or better in all music and music therapy courses. *A music education major* must earn a grade of C- or better in all music and music education courses, and in Education 205 or 215.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicums and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

The Bachelor of Arts in Music normally requires Music 100, 101, 102, 103, 104, 105, 201, 202, 203, 204, 321, 322, 415 or 417, 419, 440, 441, 442, twelve semester hours credit in applied music, a senior recital, and three hours of ensemble credit. The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental advisor, each Bachelor of Arts music major works out a program which includes at least 40 hours of music courses.

The Minor in Music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The Minor in Music requires Music 101-103; 102-104; 105; 415 or 417 or 441 or 442; four semesters of instruction in one applied music area; minimum of two credits of music ensemble participation; a minimum of three credits of music electives; and attendance at Repertoire Class (Music 100) for four semesters.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to pre-college students, adults, and college students who desire to take instruction without credit. Instruction is available from departmental faculty and other qualified teachers. Interested persons should contact Prof. Debra Seyler, director of the Preparatory Division.

100 Repertoire Class

0 credit. This class provides performance opportunities for students in applied music. It meets for 1/2 hour each week and is required for all music majors and minors who are enrolled for applied music instruction.

101 Music Theory

2 credits. **(Old Core)** Fundamentals of music theory, harmony, and form, with emphasis on scales, keys, modes, and notation. Fall semester. Prof. Douglas.

102 Music Theory

2 credits. **(Old Core)** A continuation of Music 101, with an introduction to nonharmonic tones and seventh chords. Includes binary and ternary forms plus elementary keyboard harmony. *Prerequisites:* Music 101, Music 103; *permission of instructor.* Spring semester. Prof. Douglas.

103 Fundamentals of Sight Singing and Training

1 credit. Development of visual, aural, and basic keyboard skills related to the theoretical and analytical materials covered in Music 101. *Corequisite:* Music 101. Prof. Rohrbacher.

104 Sight Singing and Ear Training

1 credit. A continuation of 103. *Prerequisite:* Music 103 or *permission of instructor.* (Students who fail Music 104 are not permitted to enroll in advanced music theory, Music 201.) Spring semester. Prof. Rohrbacher.

105* Introduction to Music Literature

3 credits. **(Cultural Heritage and Old Core)** Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Douglas, Harrison, Stites.

106* Interpretation of Music

1 credit. **(Creative Expression)** This is a course for general college students who can read music and who wish to participate in a musical ensemble or continue private lessons. It is designed to supplement the musical experience by developing a deeper understanding of musical interpretation, as distinct from technique. In the lectures which discuss particular aspects of interpretation, examples from those works being prepared for performance in the ensembles and lessons will be used. This course fulfills the AU core requirement in "Creative Expression" when coupled with enrollment in an ensemble or private instruction for both semesters the same academic year in which it is taken. It may also be taken to fulfill old core requirements, or as an elective. One 50-minute class meeting per week. Fall and Spring semesters. Prof. Harrison.

111 Voice Class

1 credit. **(Old Core)** Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Prof. Roth.

115* Music Fundamentals at the Keyboard

3 credits. **(Creative Expression and Old Core)** This course provides the student with basic skills in producing and reading music at the keyboard. Attention is given to ear training, basic keyboard technique, and musicianship, as well as to sight reading. The course utilizes the department's new digital piano laboratory. Daily practice is required. Fall and Spring. Prof. Seyler.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite:* *permission of instructor for non-majors.* Prof. Seyler.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. Prof. Englar.

120 Guitar Class

1 credit. **(Old Core)** A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite:* Music 119 or *permission of instructor.* Prof. Englar.

141 Recreational Music

2 credits. Survey of recreational music resources and activities, with emphasis on the development and application of leadership and music performance skills in recreational and therapeutic settings. *Prerequisite:* *music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

150 Music Therapy Seminar

0 credit. This weekly seminar offers music therapy majors a forum for sharing problems, successful procedures and plans or clinical experiences. Invited guests often make presentations. Required of all music therapy majors each semester. Prof. Rohrbacher.

151 Introduction to Music Therapy

2 credits. A survey of music therapy through lecture-demonstration sessions, readings, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite:* *music major or permission of instructor.* Fall semester. Prof. Rohrbacher.

201 Advanced Music Theory

2 credits. Advanced harmony including seventh chords, chromatic harmony, and form and analysis. 18th-century Counterpoint is introduced. *Prerequisite:* Music 102, 104. Fall semester. Prof. Douglas.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on 19th and 20th century harmonic practice. Includes compositions using 18th century contrapuntal techniques. *Prerequisite:* Music 201, 203. Spring semester. Prof. Douglas.

203 Advanced Sight Singing and Ear Training

1 credit. Continued emphasis on reading and dictation skills. Fall semester. Prof. Rohrbacher.

204 Advanced Sight Singing and Ear Training

1 credit. A continuation of Music 203. *Prerequisite:* Music 203 or *permission of instructor; corequisite:* Music 202. Spring semester. Prof. Rohrbacher.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. Fall semester. Prof. Douglas.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. Spring semester. Prof. Luckenbill.

235 History of Jazz

3 credits. **(Old Core)** Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, viola, violoncello, and double bass. Fall semester. Prof. Palmquist.

238 Intermediate String Class

1 credit. A continuation of 237 dealing with the study of cello and double bass. *Prerequisite:* Music 237. Spring semester. Prof. Palmquist. (*The department reserves the right to offer the class as private lessons if fewer than three students are enrolled.*) Prof. Palmquist.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202-204, 269.* Fall semester. Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Course provides students with opportunities to develop their knowledge of basic theory, skills in singing and song leading, conducting, playing classroom instruments, listening and rhythmic activities, and teaching music lesson plans, as well as to observe classroom music instruction. Prof. Palmquist.

311 Music in the Elementary School

3 credits. Thorough study of objectives, methods, and materials for elementary school music programs through singing, instrumental, rhythmic, creative, and listening activities. Detailed study and use of recent school music songbook series. Observations and laboratory experience included. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Palmquist.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experiences included. *Prerequisite: music major or permission of the instructor.* Spring semester. Prof. Kitchen.

321 Instrumental and Choral Conducting Fundamentals

3 credits. Instruction in the fundamentals of conducting. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Kitchen.

322 Instrumental and Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Prof. Stites.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and an introduction to string ensemble techniques, methods, and literature. *Prerequisite: Music 238.* Fall semester. Prof. Palmquist. *(The department reserves the right to offer this course as private lessons if fewer than three students are enrolled.)* Prof. Palmquist.

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. Fall semester. Prof. Hall-Gulati.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343.* Spring semester. Prof. Hall-Gulati.

353 Music Therapy Techniques

2 credits. The study of behavioral and music therapy techniques used in clinical practice, with emphasis on observation, assessment, program implementation, and accountability. *Prerequisite: Music 252.* Fall semester. Prof. Rohrbacher.

354 Music Research Methods

2 credits. An introduction, with an emphasis on using design and data analysis as the basis for evaluating research literature in music therapy,

music education, and psychology of music. *Prerequisite: Psychology 105.* Fall semester. Prof. Rohrbacher.

371-380 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

415 Classical Romantic Music Literature

2 credits. (Old Core) Survey of instrumental and vocal music of the Classical and Romantic periods. *Prerequisite: Music 105 or permission of instructor.* Fall semester. Prof. Stites.

417 Twentieth Century Music Literature

2 credits. (Old Core) Survey of music from Impressionism to the present avantgarde styles. *Prerequisite: Music 105 or permission of instructor.* Spring semester. Prof. Harrison.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisite or corequisite: Music 202.* Spring semester. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. Credit for Music 431 is given only upon completion of Music 432. *Prerequisites: two semesters of Music 269.* Offered with sufficient enrollment. Prof. Seyler.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite: Music 431.* Prof. Ronning-Seyler.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. Spring semester. *Prerequisites: Music 202, 204.* Profs. Kitchen, Douglas.

441 History of Music

3 credits. Survey course from antiquity to the Baroque era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Harrison.

442 History of Music

3 credits. Survey course from the Baroque through the Contemporary era with emphasis on the development of musical forms, styles, and media through considering music literature in its cultural environment. *Prerequisite: Music 202 or permission of instructor.* Spring semester. Prof. Harrison.

455 Music Therapy I: Principles

3 credits. A survey of literature on the nature and principles of music therapy, including theory, practice and research. The application of these principles according to specific client populations and preparation for clinical internship will be emphasized. *Prerequisites: Music 252, 353, 354; or permission of instructor.* Fall semester. Prof. Rohrbacher.

456 Music Therapy II: Practices

3 credits. The study of philosophies and practices of disciplines as related to music therapy and the role of the music therapist as a treatment team member. Emphasis will be on the integration of the knowledge and skills associated with the practice of music therapy and issues related to professional employment. *Prerequisite: Music 455 or permission of instructor.* Spring semester. Prof. Rohrbacher.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and

secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite: permission of Department.* Prof. Kitchen.

473-78 Practical Experiences I-VI: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. A minimum of thirty hours for each clinical experience is required. Music therapy majors only. *Prerequisites: Music 141, 151.* Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite: permission of instructor.* Prof. Rohrbacher.

481-490 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, or research under faculty supervision. *Prerequisite: permission of instructor.* Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department chair for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles.

Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; they may repeat the ensembles for credit which they apply to Core requirements. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director. Ensembles are graded P/NP

MU 106 must be taken with ensembles or private lessons to fulfill the Creative Expression requirement in the Core curriculum.

268* Voice

1 credit. (Old Core) Profs. Roth, Stites.

269* Piano

1 credit. (Old Core) Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Seyler.

270* Organ

1 credit. (Old Core) Prof. Schroeder.

271* Violin

1 credit. (Old Core) Prof. Palmquist.

272* Viola

1 credit. (Old Core) Prof. Palmquist.

273* Cello

1 credit. (Old Core) Prof. Palmquist.

274* String Bass

1 credit. (Old Core) Prof. Palmquist.

275* Guitar

1 credit. (Old Core) Prof. Englar.

276* Flute

1 credit. (Old Core) Prof. Kirkpatrick.

277* Clarinet

1 credit. (Old Core) Profs. Hall-Gulati, Kitchen.

278* Oboe

1 credit. (Old Core) Staff.

279* Bassoon

1 credit. (Old Core) Staff.

280* Saxophone

1 credit. (Old Core) Profs. Hall-Gulati, Kitchen.

281* Trumpet/Cornet

1 credit. (Old Core) Prof. Douglas.

282* French Horn

1 credit. (Old Core) Prof. Douglas.

283* Trombone

1 credit. (Old Core) Prof. Douglas.

284* Baritone/Euphonium

1 credit. (Old Core) Prof. Douglas.

285* Tuba

1 credit. (Old Core) Prof. Moore.

286* Percussion

1 credit. (Old Core) Prof. Luckenbill.

360 Chamber Music

1/2 credit. (Old Core) General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Collegians (men's choir), Piano Trio, and Piano Ensemble will be formed as need arises.

361* Concert Choir

1 credit. (Old Core) Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Stites.

362 Choral Union

1/2 credit. (Old Core) Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Not offered 1990-91.

365* Orchestra

1 credit. (Old Core) Performs two or three major concerts during the academic year which constitute an invaluable part of musical training in literature and technique of performance. *Prerequisite for winds and percussion: permission of instructor.* Prof. Palmquist.

368 Jazz Lab

1/2 credit. (Old Core) The Jazz Lab offers small groups of students instruction in the basic skills of improvisation, stylization, and performance. The lab complements the jazz component of the Concert Band. Prof. Rudolph.

369* Concert Band

1 credit. (Old Core) Open to all qualified students; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

105* Introduction to Theatre

3 credits. **(Cultural Heritage and Old Core)** Introduction to the various interrelated arts and disciplines that make up theatre performance and production, such as acting, playwriting, directing, and scene design. Emphasis is on history, literature, and theory, with support from a textbook, audio-visual aids, analysis of scripts, and possibly one or more field trips. Spring semester. Prof. Kiser.

155* Stagecraft and Lighting

3 credits. **(Creative Expression and Old Core)** Examination and application of theatre staging, design, and lighting. Topics include scenery design and construction, execution of technical effects, and theatre safety. Fall and Spring semester. Prof. Kiser.

165* Basic Acting

3 credits. **(Creative Expression and Old Core)** Theory and practice of the art and craft of the stage actor. Skills are developed in voice, body involvement, script analysis, style and theory. Students participate in projects requiring the memorization, creation, and presentation of scenes. Fall semester. Prof. Kiser.

French

See Department of Modern Languages, page 46.

German

See Department of Modern Languages, page 46.

Department of History

Professors Durnbaugh, K. Kreider, Mumford (*Chair*),
Ritsch, Vassady, Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 115

(or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts degree as a history major and receive certification in the social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

For a *minor in history*, the student must successfully complete 18 hours of course work, composed of the following courses: History 115, 201, 202, and three additional history courses. Students with specific career or personal interests are encouraged to discuss these with the department chair.

115* Modern European History

3 credits. **(Cultural Heritage and Old Core)** An examination of the major developments that have taken place in European history since 1500. A highly selective approach to long range developments and problems of our Western heritage. Staff.

201 History of the United States to 1877

3 credits. **(Old Core)** A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the earliest colonial settlements through the end of post-Civil War Reconstruction—roughly 1877. Fall semester. Profs. Mumford, Winpenny.

202 History of the United States since 1877

3 credits. **(Old Core)** A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the beginning of Reconstruction—roughly 1865—through the present. Spring semester. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. **(Old Core)** A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

215 English History to 1688

3 credits. **(Old Core)** Medieval England from the Anglo-Saxons to the Revolution of 1688, with emphasis on the constitutional and legal foundations, and the role of the Church. Fall semester. Prof. Poole.

216 English History since 1688

3 credits. **(Old Core)** Modern Britain from the Revolution of 1688 to Elizabeth II, with emphasis on the evolution of the parliamentary form of government and Britain's role as a world power. Spring semester. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. **(Old Core)** Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Fall semester, alternate years. Prof. Kreider.

218 Europe in the Twentieth Century

3 credits. **(Old Core)** An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Spring semester, alternate years. Prof. Kreider.

306 Recent History of the United States

3 credits. **(Old Core)** An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. **(Old Core)** The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

308 Technology and American Society

3 credits. **(Old Core)** The impact of technology on the development of American society, and also the extent to which American values have shaped the technology. Focus is primarily on the 19th and 20th centuries—from the Age of Steam to the Space Age. Prof. Winpenny.

310 American Ethnic History

3 credits. **(Old Core)** A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. **(Old Core)** The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. **(Old Core)** Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

319 History of Tsarist Russia

3 credits. **(Old Core)** The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Fall semester. Prof. Kreider.

320 History of Soviet Union

3 credits. **(Old Core)** A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Spring semester. Prof. Kreider.

321 History of Non-Violence

3 credits. **(Old Core)** An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. Kreider.

323 History of China

3 credits. **(Old Core)** A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

324 History of Japan

3 credits. **(Old Core)** A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

327 History of Africa

3 credits. **(Old Core)** A survey of African history and culture using an interdisciplinary approach, with emphasis on the history of the politics, cultures, arts, and societies of the African people. Prof. Vassady.

328 Modern Africa

3 credits. **(Old Core)** Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330-339 Studies in United States History

3 credits for each course. **(Old Core)** An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340-349 Minorities in United States History

3 credits for each course. **(Old Core)** An incisive view of minorities in a society venerating majoritarian rule: for example. Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff.

370-379 Special Topics

3 credits. **(Old Core)** Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. **(Old Core)** The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. **(Old Core)** A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Staff.

406 Social and Intellectual History of the United States

3 credits. **(Old Core)** An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Staff.

411 Greek and Roman History

3 credits. **(Old Core)** Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. *By special arrangement.* Staff.

412 Medieval History

3 credits. **(Old Core)** Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. *By special arrangement.* Staff.

480-489 Independent Study

Variable credit. **(Old Core)** Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites: approval of the department chair and the Provost, permission of instructor.* Staff.

498-499 History Seminar

3 credits. **(Old Core)** A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell, D. Koontz, Shubert (*Chair*)
Associate Professors R. Dolan, J. Koontz, Morse
Assistant Professor Polin

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

Some of these courses also satisfy the Core Program requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers six concentrations. *The pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The secondary education concentration is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The actuarial science concentration provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The statistics concentration provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The computer science concentration is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The general mathematics concentration is for those who want to design their own programs in mathematics.

For the nonmathematics major, the department offers a choice of two minors: *in statistics and in mathematics*. Each is developed on a common foundation of twelve hours of calculus and three hours of linear algebra. The *minor in statistics* is designed to provide training specifically in this field, while the *minor in mathematics* allows

the student the flexibility of course selection.

In addition to Mathematics 121, 122, 222, and 201, the minor requirements are as follows:

For statistics, Mathematics 151, 351, and either 252 or 352.

For mathematics, three courses above Mathematics 222.

All mathematics majors are required to take a minimum of 39 hours in mathematics courses, including Mathematics 121, 122, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112 or above, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 222).

The pure mathematics concentration requires Mathematics 301, 302, 421, 422, and two courses from other acceptable mathematics electives.

The secondary education concentration (required for secondary education certification) requires Mathematics 301, 341, 351, 421, and two courses from other acceptable mathematics electives. In addition, Psychology 105; Education 215, 305, 308, 309, 415, 473.

The actuarial science concentration requires Mathematics 351, 352, 453, 362, and 331. In addition, Accounting 105, 106; Economics 101, 102. Also required is the passing of at least one examination of the Society of Actuaries by February of the senior year.

The statistics concentration requires Mathematics 252, 351, 352, 453, 331.

The computer science concentration requires Mathematics 362, and four other acceptable mathematics electives, at least one of which must be 352 or 422; Computer Science 122, 221, 222, and one other 300- or 400-level computer science course other than 321. (These computer science courses also fulfill the modern language or computer skills requirement.)

The general mathematics concentration requires five acceptable mathematics electives, at least one of which must be 352 or 422.

011 Intermediate Algebra

2 credits. An accelerated review of the fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101, 117, 151, 211, and 212. *Credits are not applicable to the 125 required for graduation.* Fall semester. Staff.

101 Precalculus Mathematics

4 credits. (**Old Core**) Precalculus study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011* (competency). Fall semester. Staff.

117 Concepts of Calculus

4 credits. **(Old Core)** Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency).* Staff.

121* Calculus I

4 credits. **(Mathematical Analysis and Old Core)** The basic concepts, theory, and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency).* Staff.

122 Calculus II

4 credits. **(Old Core)** A continuation of Ma 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry, sequences and series are also included. *Prerequisite: Mathematics 121.* Staff.

131 Finite Mathematics

3 credits. **(Old Core)** A study of various noncalculus topics, such as set theory, logic, probability, matrices, linear programming, and Markov chains. Applications are drawn from the biological and social sciences. *Prerequisite: Mathematics 151.* Spring semester. Staff.

151* Probability and Statistics

3 credits. **(Mathematical Analysis and Old Core)** The basic principles of probability, distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and methodology, and their relation to everyday life. *Prerequisite: Mathematics 011 (competency).* Staff.

201 Linear Algebra

3 credits. **(Old Core)** A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, eigenvectors and linear transformations. Students will be expected to create mathematical proofs. *Prerequisite: Mathematics 121.* Prof. J. Koontz.

211 Concepts in Modern Mathematics I

3 credits. **(Old Core)** An introduction for prospective elementary teachers to some of the concepts and applications of modern mathematics. Includes such topics as sets and functions, problem solving, critical thinking, logic, measurement, introduction to computers, numeration systems, and number theory. *Meets old core requirements only for elementary and early childhood education majors. Prerequisite: Mathematics 011 (competency)* Prof. R. Dolan.

212 Concepts in Modern Mathematics II

3 credits. **(Old Core)** A continuation of MA 211 for prospective elementary teachers. Topics include the structure of number systems, geometry, geometry of measurement, coordinate geometry, three dimensional geometry, metric system, and an introduction to probability and statistics. *Meets old core requirements only for elementary and early childhood education majors. Prerequisite: Mathematics 011 (competency)* Prof. R. Dolan.

222 Calculus III

4 credits. A continuation of MA 122, completing the basic topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. **(Old Core)** Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. Fall semester. Prof. Morse.

252 Statistical Methods

3 credits. **(Old Core)** A continuation of material presented in 151.

Statistical techniques are presented for solving a variety of problems arising in business, the social, physical and life sciences. Topics include simple and multiple regression, model building, analysis of count data, nonparametric statistics, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Abstract Algebra I

3 credits. A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201.* Fall semester, even-numbered years. Prof. D. Koontz.

302 Abstract Algebra II

3 credits. A continuation of Abstract Algebra I involving a more in-depth study of the structures introduced in Ma 301 and abstract vector spaces. Emphasis will be on the development of skills in proof construction and interpretation of abstract concepts. *Prerequisite: Mathematics 301.* Spring semester, odd-numbered years. Prof. Shubert.

321 Differential Equations

3 credits. A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods are studied, including techniques for solving linear systems of differential equations. *Prerequisite: Mathematics 201, 222.* Spring semester. Prof. Polin.

324 Mathematical Models and Applications

3 credits. Survey of a number of mathematical topics and a variety of models in the social and life sciences. An introduction to the modeling process including problem identification, model construction, identification and collection of data, model validation, and calculation of solutions of the model. Problems provide motivation for the development of tools and techniques employed throughout applied mathematics: probability, theory, matrix algebra, optimization, and linear programming. Each student will be required to present a paper. *Prerequisites: Mathematics 201, 222.* Spring semester, even-numbered years. Prof. Morse.

331 Operations Research

3 credits. A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, integer programming, dynamic processing, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: Mathematics 151, 201.* Fall semester, even-numbered years. Prof. Shubert.

341 Modern Geometry

3 credits. **(Old Core)** The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall semester, odd-numbered years. Prof. R. Dolan.

351 Mathematical Statistics I

3 credits. A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's *t*, Snedecor's *F*, and normal distributions. *Prerequisite: Mathematics 222.* Fall semester. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. A continuation of MA 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 151, 201, 351.* Spring semester. Prof. Blaisdell.

362 Numerical Analysis

3 credits. A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in engineering and the sciences. Topics include solutions of

equations in one variable, numerical differentiation and integration, polynomial approximation, solution of linear systems, and numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; Computer Science 121.* Spring semester, odd-numbered years. Prof. R. Dolan.

370-379 Special Topics in Mathematics

Variable Credit. Directed study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, series of real numbers, limits and metric spaces, and continuity. *Prerequisites: Mathematics 201, 222.* Fall semester, odd-numbered years. Prof. D. Koontz.

422 Real Analysis II

3 credits. A continuation of MA 421, including such topics as integration, differentiation, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring semester, even-numbered years. Prof. D. Koontz.

453 Time Series Analysis

3 credits. A study of the theory and application of statistical methodology pertaining to the modeling of time series. Time domain ARIMA models are emphasized, and extensive use is made of statistical analysis software. *Prerequisite: Mathematics 352.* Spring semester, odd-numbered years. Prof. Blaisdell.

480-489 Independent Study

Variable credit. Staff.

Education 305 Practicum in Secondary Education

4 credits. *Prerequisite: Psychology 105; corequisite: Education 308* Fall semester, even-numbered years. Prof. R. Dolan.

Department of Modern Languages

Associate Professors Daiga, Goodling
Assistant Professors Barnada, Trachte (*Chair*)

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture. The pragmatic virtues of a usable skill are joined with the humanistic values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by completing 30 credit hours in one language above 112. A minimum of 9 hours above 112 must be taken in residence at Elizabethtown College. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are also encouraged to participate in the Brethren College Abroad program.

Department majors must complete the following courses: in residence-Modern Language 211, 212, 311, and 323 or a 370 course, and a three credit independent study project (481-490); in the Brethren Colleges Abroad Program—Advanced Conversation and Composition, Phonetics, French/German/Spanish History, and History of (French/German/Spanish) Literature. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are a minimum of 12 credits above Modern Language 112 in the following courses: Modern Language 211, 212, 311, 312, 323 or a 370 course, if offered. The internship, Modern Language 318, is optional. After completing the required course work, students must take the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

A placement test is administered free of charge during summer orientation for freshmen. In addition, it is offered the first week of classes and in spring semester, prior to Fall pre-registration. It may be taken at any other time during the academic year for the general college fee of \$25. All students with more than one year of language preparation must take the placement test before registering in language courses for academic credit.

111 Fundamentals of Language and Culture I (French, German, Spanish)

5 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks.

112* Fundamentals of Language and Culture II (French, German, Spanish)

5 credits. (**Foreign Cultures and International Studies and Old Core**) Expansion of basic elements of structure and the phonetic system in culturally authentic contexts. Additional development of communicative competency in five skill areas: listening, speaking, writing, reading, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks. *Prerequisite: Modern Language 111 or placement by examination.*

211* Communication Through Language and Culture I (French, German, Spanish)

3 credits. (**Foreign Cultures and International Studies**) Emphasizes functional proficiency. A functional-notational syllabus expands use of linguistic tasks such as asking questions, stating facts, describing,

narrating, and expressing feelings. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 112 or placement by examination.*

212* Communication Through Language and Culture II (French, German, Spanish)

3 credits. **(Foreign Cultures and International Studies)** Expanded use of linguistic functions. Introduction and development of more advanced tasks such as sustaining opinions, explaining, comparing, and hypothesizing. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 211 or placement by examination.*

311 Makings of Modern Society (French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena and issues which have shaped and continue to shape the modern nation. Courses are organized around a theme which may vary from year to year. Readings are taken from literary, sociological and political sources. Films, slides, and audio and videotapes supplement written materials. *Prerequisite: Modern Language 212 or permission of instructor. Fall semester.*

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: French 211 or permission of instructor. Spring semester.*

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Spanish 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. **(Old Core)** Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres.

371-380 Special Topics (French, German, Spanish, Russian)

3 credits. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability. *Prerequisite: Modern Language 212 or permission of instructor* (*Russian courses are offered if there is sufficient interest. Course 371 provides a reading knowledge in the language.)

481-490 Independent Readings (French, German, Spanish)

3 credits. For senior language majors. Independent projects in some area of language or literature.

Department of Occupational Therapy

Associate Professors Jones (*Chair*), Petersen
Assistant Professors Kasar, Kelly
Instructor Farley

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy has been accredited since 1976 by the American Occupational Therapy Association and the American Medical Association. The department was reaccredited in 1984.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 398, 402, 405, 407, 409, 410, 412, 421, 498; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; and Mathematics 151 and 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Field Work Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of field work education. Students are responsible for their transportation and travel costs to and from assigned clerkship and field work centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II field work experience in the event these are not provided by the affiliated hospital or clinic.

The student may select either of the following options with faculty approval:

First Option: The student may complete three years of academic work followed by three months of Level-II field work experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II fieldwork the next summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II field work experience.

Additional Field Work Education

After completing the required six months of Level-II field work, the student may elect to complete additional Level-II field work. This study may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education.

Related Expenses

Additional expenses for the occupational therapy student normally include transportation to field work sites, insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association. There are reduced rates for students.

National Certification Examination

Upon being awarded the bachelor's degree in occupational therapy and successful completion of Level-II field work, the student is eligible to sit for the national certification examination, held twice a year, usually in July and January. The examination is conducted by the American Occupational Therapy Certification Board (AOTCB) which is responsible for awarding certification and the designation Occupational Therapist Registered (OTR).

Admission Requirements for the Department

1. Prior To Admission Into The Department:

- a. The student must submit an application with all supporting documentation to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. Transfers are permitted at the sophomore level only, on a space available basis.
- b. The student must have an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- c. Freshman Occupational Therapy majors are selected by the Occupational Therapy faculty. The selection process includes consideration of rank in high school class, SAT scores, interview, and knowledge of occupational therapy.
- d. The names of freshmen Occupational Therapy students selected for the next academic year are submitted to the Director of Admissions.
- e. The Department of Occupational Therapy requires that the student submit an updated medical history

on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a physical or emotional problem arise which the Department feels may jeopardize the student's participation in the program.

2. Evaluation After Admission Into The Department:

- a. Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:

(1) Have at least a 2.5 average in all courses required for the major (both occupational therapy and related requirements) at the end of the sophomore year.

(2) Obtain grades of at least C or better in OT 303, 316, 402 and 405.

(3) Satisfactorily meet the standards and requirements in all phases of field work education including Level-I field work, laboratory, and Level-II field work experience.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for nonmajors is required.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for non-majors is required.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected activities, fine motor and product oriented as well as games and gross motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors is required.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors is required.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy. Emphasis on normal movement and patterns of movement including body mechanics, grasp and gait analysis. *Prerequisites: Biology 201; Occupational Therapy majors only.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, and collage. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth through Adolescence

3 credits. An examination of normal human development along the birth through adolescence segment of the developmental continuum. Emphasis is on sensorimotor development and occupational behaviors in the areas of exploration, play, self-care, educational, leisure, prevocational and social performance. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. The course format includes lecture, seminar, laboratory and Level I Field work Experience. *Corequisite: Occupational Therapy 305. Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors is required.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors is required.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies, and professional reporting are coordinated with Level-I Field work experience, lecture, laboratory, and seminar. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors is required.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester.

370-379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor required.*

398 Level II Field Work—Psychosocial Rehabilitation

No credit. Twelve weeks of Level II Field Work experience in the area of psychosocial rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum score on the AOTA Field work Evaluation. Further information on Level II Field work can be found in the department student handbook and the Level II Field Work Student Manual. *Occupational Therapy majors only.* Summer term.

402 Geriatric Occupational Therapy

2 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as geriatric occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Occupational Therapy majors only.* Spring semester.

405 Psychosocial Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approach used to enhance the function of individuals with major physical disabilities. Lecture, laboratory, seminar, and Level-I Field Work experience. *Prerequisite: Occupational Therapy 218; Corequisite: Course leading to CPR certification. Occupational Therapy majors only.* Fall semester.

407 Psychosocial Pathology

2 credits. Lectures relative to etiology, prognosis and treatment and major pediatric diagnoses of other general medical conditions. *Permission of the instructor for non-majors is required.* Fall semester.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. *Prerequisites: Mathematics 151, 252 suggested. Permission of the instructor for non-majors is required.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the management, supervisory functions of administering an occupational therapy department in traditional and nontraditional settings. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, program evaluation, and legal and ethical issues. *Occupational Therapy majors only.* Spring semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. Other topics including grant writing, publishing, literature critique, and data analysis. *Prerequisite: Occupational Therapy 409. Occupational Therapy majors only.* Spring semester.

414 Advanced Senior Practicum Research

Variable credit. Taken in conjunction with Occupational Therapy 412, Senior Practicum; for students who desire to participate in developing and implementing a data based research project to be conducted either on campus or at a nearby clinical facility.

420 Sensory Integration

1 credit. Introduction to study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only.* Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite: Biology 201.* Occupational Therapy majors only. Fall semester.

422 Kinesiology II

2 credits. Advanced concepts of physical rehabilitation including theory bases of Bobath, PNF, Rood, and Brunnstrom. Joint mobilization principles for the treatment of pain and stiffness also included. *Occupational Therapy majors only.* Spring semester.

481-488 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

489 Independent Study in Level II Field Work

No credit. Variable length of Level II Field Work experience in area of student's interest. Arranged on an availability basis. *Prerequisites: Occupational Therapy 398 and 498. Occupational Therapy majors only.* Fall semester.

498 Level II Field Work—Physical Rehabilitation

No credit. Twelve weeks of Level II Field Work experience in the area of physical rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum score on the AOTA Field Work Evaluation. Further information on Level II Field Work can be found in the department student handbook and the Level II Field Work Student Manual. *Prerequisites: All academic course work and Occupational Therapy 398. Occupational Therapy majors only.* Summer or fall semester.

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A major in philosophy requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. The following seven courses are required: Philosophy 105, 115, 180, 201, 240, 310, and 490, the Senior Thesis. In addition, the student must elect two from the following: Philosophy 302, 313, 320. The remaining three hours may be taken from any of the other offerings in the department.

A minor in philosophy requires six courses in Philosophy, with the following distribution: Philosophy 105, 110 or 180, 115, 201, and either 240 or 310. An additional three hours must be selected from the following: Philosophy 240, 302, 310, 313, or 320.

105 Introduction to Philosophy

3 credits. (Old Core) An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Prof. Sutphin.

110* Logic and Critical Thinking

3 credits. (Power of Language and Old Core) A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and truth. The nature of inference from premises to conclusion, rules for deductive and inductive process; informal inferences and fallacies, and theory of definition. Prof. Sutphin.

Department of Philosophy

Professors Spiegler, Sutphin (*Chair*)
Assistant Professor Matteo

115 Ethics

3 credits. **(Old Core)** A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo.

170-79 Special Topics in Philosophy

3 credits. Courses of an experimental nature offered at the Freshman and Sophomore level. Staff.

180* Symbolic Logic

3 credits. **(Mathematical Analysis)** Studies the methods of such formal rational procedures as syllogistic, propositional, quantificational, and modal logic, and the informal procedures of inductive reasoning, meaning and definitions, and informal topics including fallacies. Prof. Sutphin.

201 Ancient and Medieval Philosophy

3 credits. **(Old Core)** An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. **(Old Core)** An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Prof. Sutphin.

240 Modern Philosophy

3 credits. **(Old Core)** A study of enduring issues in the writings of the 17th and 18th century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. **(Old Core)** A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. **(Old Core)** The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Spiegler.

310 Contemporary Philosophy

3 credits. **(Old Core)** A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Prof. Sutphin.

313 Philosophy of Science

3 credits. **(Old Core)** An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Prof. Sutphin.

320 Philosophy of Religion

3 credits. **(Old Core)** A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Prof. Sutphin.

370-79 Special Topics in Philosophy

3 credits. **(Old Core)** A constantly changing specialized study within the field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480-89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Department of Physical Education and Health

Associate Professor Ober (*Chair and Athletic Director*),
Kauffman

Assistant Professor Whitmore

Staff: Dratzkowski, Roderick

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social and moral standards, such as sportsmanship, teamwork, tolerance, and other character traits which come from properly conducted play.

All students are required to take three semester hours of physical well being courses, of which at least two must be activity courses. They may be satisfied by any of the courses offered in the Department of Physical Education, except PE 285. No more than five (5) credits of physical well being courses may be counted toward the graduation requirement.

105 Swimming

1 credit. **(Physical Well Being and Old Core)** Instruction in the basic strokes, survival swimming, and water safety.

115 Physical Fitness and Wellness

1 credit. **(Physical Well Being and Old Core)** Instruction in cardiovascular-type activities, strength, flexibility, weight control, nutrition, myths, physical activity, injury prevention and rehabilitation, safety, fitness equipment, stress, relaxation, games, exercises, and the consumer-personalizing fitness, aerobic exercises.

117 Advanced Life Saving

1 credit. **(Old Core)** Instruction and practice in life-saving, water safety, and pool management. Meets Red Cross certification requirements. Graded Pass/No Pass.

118 Water Safety Instruction

1 credit. **(Old Core)**

120 Aerobics

1 credit. **(Old Core)**

125 Tennis

1 credit. **(Physical Well Being and Old Core)** Rules, playing

techniques, and skill development.

130 Bicycling

1 credit. (Old Core)

140 Bowling

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

145 Field Hockey/Volleyball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

146 Racquetball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

150 Volleyball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

161-163 Adapted Physical Education

1 credit. (Physical Well Being and Old Core) Individual activity or collective exercise adapted to needs and abilities of the student.

165 Golf/Badminton

1 credit. (Old Core) Rules, playing techniques, and skill development.

175 Archery/Badminton

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

181-184 Self-directed Physical Education Activity

1 credit. (Old Core) For the student who attends Evening Division, studies abroad, or has extenuating circumstances which prohibits the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

185 Basketball

1 credit. (Old Core) Rules, playing techniques, and skill development.

190 Horsemanship

1 credit. (Physical Well Being and Old Core) Basic riding positions, balance, equine safety. Discuss equine behavior, care, tack, styles, and management.

194 Skiing

1 credit. (Old Core)

195 Soccer

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades. *Required of Elementary Education and Early Childhood Education majors.*

Department of Physics

Professor Ranck

Associate Professors Leap, Thompson

Assistant Professors Ferruzza, Gaffney (*Chair*), Stuckey

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in science and technical fields. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, all intended to cultivate an ability for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in the department commonly go on to graduate school or to careers in physics, engineering, computer technology, or education.

Programs in Physics

Programs in physics lead to the B.S. degree. The **physics major** is preparation either for graduate school or for the technical job market. The **engineering physics major** is a practical program designed to lead to a technical career in industry. The **chemical physics major** combines study in the fields of physics and chemistry. The **secondary education major in physics**, offered in conjunction with the Education Department, leads to Pennsylvania teacher certification at the secondary level.

Programs in Engineering

Engineering majors in the 3/2 program study for three years at Elizabethtown College and two years at the Pennsylvania State University. Upon completion of the program, the B.A. degree is awarded by Elizabethtown College and the B.S. degree by Pennsylvania State University. Engineering students in the 3/2 program who maintain a 3.0 cumulative average at Elizabethtown College are guaranteed admission to the engineering school of the Pennsylvania State University.

The Elizabethtown College four-year engineering programs, which lead to the B.S. degree, are preparation for technical careers in industry. The **computer engineering major** combines studies of engineering and computer technology, including both hardware and software. The **industrial engineering major** combines engineering physics with business administration.

Physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 351, 421, 422, 491, and 492; Chemistry 113 and 201; Mathematics 121, 122, 201, 222, and 321; and Computer Science 115.

Engineering physics majors are required to take Physics 101, 102, 202, 221, 241, either 242 or 262, 301, 302, 321, 351, and 361; Drawing 115 and 116; Mathematics 121, 122, 201, 222, and 321; Chemistry 113 and 201; Computer Science 115; and Economics 101.

Chemical Physics majors are required to take Physics 101, 102, 221, 202, 241, 301, 302, 321, 351, 421, 491, and

492; Mathematics 121, 122, 201, 222, and 321; Computer Science 115; and Chemistry 113, 114, 344, and 352.

Secondary education majors in physics are required to take Physics 101, 102, 202, 204, 221, 241, 351, 361, 362; Chemistry 101, 201; Biology 105, and 106 or 108; Mathematics 121, 122, 201; Computer Science 115; Psychology 105; Education 305, 308, 309, 415, 473; and three additional credits of electives from the offerings of the Department of Physics.

Secondary education majors in physics should consult the interdisciplinary section of the catalog for a complete description and a listing of required courses.

At Elizabethtown College, **engineering students in the 3/2 program** are required to take Physics 101, 102, 202, 221, 241, either 242 or 262, 301, 302, 321, 351, and 361; Mathematics 121, 122, 201, 222, and 321; Chemistry 113 and 201; Computer Science 115; Drawing 115 and 116; and Economics 101.

Computer engineering majors are required to take Physics 101, 102, 202, 221, 241, 242, 301, 302, 321, 351, and 361; Mathematics 121, 122, 201, 222, and 321; Computer Science 121, 122, 221, 222, and 322; Drawing 115 and 116; Chemistry 113; and Economics 101.

Industrial engineering majors are required to take Physics 101, 102, 202, 221, 241, either 242 or 262, 301, 302, 321, 351, and 361; Mathematics 121, 122, 201, 222, and 321; Chemistry 113 and 201; Computer Science 115; Drawing 115 and 116; Economics 101 and Business Administration 248 or Mathematics 331.

Minors in physics are required to take Physics 101, 102, 202, 221, and six additional credits in physics.

101* Physics I

4 credits. **(The Natural World, Old Core)** Introduction to the basic concepts of mechanics, classical kinematics and dynamics (linear and rotational motion, force and torque, energy), friction, statics, fluids, kinetic theory of matter. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite or Corequisite: Mathematics 117.* Fall semester. Prof. Gaffney.

102 Physics II

4 credits. **(Old Core)** A continuation of Physics 101. Introduction to the basic concepts of electricity, magnetism, geometrical optics, interference and diffraction, and brief introductions to relativity, quantum theory, atomic and nuclear physics, and elementary particle physics. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite: Physics 101.* Spring semester. Prof. Gaffney.

112 Astronomy

4 credits. **(Old Core)** A study of the structure and evolution of stars, planetary systems, and galaxies, and less familiar astronomical objects such as quasars, pulsars, and black holes. Laboratories provide an opportunity to observe the planets, stars, clusters, and galaxies and some practical experience in determining astrometric quantities. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Spring semester. Prof. Schaeffer.

113* Spacetime Physics

4 credits. **(The Natural World and Old Core)** A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114 Cosmology

4 credits. **(Old Core)** A study of the origins, evolution, and future of the universe. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra and trigonometry.* Spring semester. Freshman Seminar (without lab) in fall. Prof. Stuckey.

116 Quantum Theory and Reality

4 credits. **(Old Core)** A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Hours: lecture 3, laboratory 2. Spring semester. Prof. Ranck.

202 Physics

4 credits. **(Old Core)** An introduction to special relativity and mathematical methods for physicists and engineers. Special relativity topics include time dilation, length contraction and the energy content of matter. Mathematical techniques involved in describing physical phenomena such as waves and energy transfer are studied. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 221; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Stuckey.

221 Modern Physics

3 credits. **(Old Core)** Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. [This course is the same as Chemistry 343.] Hours: lecture 3. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

221L Modern Physics Laboratory

2 credits. Experiments relating to the atomic nature of matter and the interaction of radiation with matter. Introduction to special computational techniques appropriate for the experiments. *Corequisite: Physics 221 or Chemistry 343.* Fall Semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Prof. Rutter.

242 Computer Systems Interfacing

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. [This course is the same as Computer Science 333] Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

262 Statics & Dynamics

3 credits. Equilibria of particles and rigid bodies subject to concentrated and distributed forces, with practical applications to mechanical systems. Topics include unbalanced forces, work and energy, and impulse and momentum. Hours: lecture 3. *Prerequisite: Physics 101.* Fall semester. Prof. Ferruzza.

301 Mechanics

3 credits. **(Old Core)** An intermediate course in mechanics. Newtonian mechanics of systems of particles, central forces, oscillations, collisions,

rigid-body dynamics, and the Lagrangian and Hamiltonian formalisms for generalized coordinates. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, 321.* Fall semester. Prof. Gaffney.

302 Electromagnetism

3 credits. **(Old Core)** An intermediate course in electromagnetism, including electro- and magnetostatics and dynamics, Maxwell's equations, macroscopic fields, electromagnetic waves, and special relativity. Hours: lecture 3. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Prof. Gaffney.

321 Thermal and Statistical Physics

3 credits. **(Old Core)** The principles of thermodynamics, including variables and equations of state, the laws of thermodynamics, heat engines, phase transitions, blackbody radiation, kinetic theory, and bosonic and fermionic systems. Introduction to the distribution functions and the microcanonical, canonical, and grand canonical ensembles. Hours: lecture 3. *Prerequisite: Physics 202.* Fall Semester. Prof. Ferruzza.

351 Advanced Physics Laboratory

2 credits. Advanced laboratory courses with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. A wide variety of experimental techniques and analyses are used. Individual experimental design is emphasized. Hours: laboratory 6. *Prerequisites: Physics 202, 221, 241.* Fall semester. Prof. Stuckey.

361 Engineering Practices

1 credit. Weekly presentations and discussions by students and faculty of practices, techniques, and topics in the engineering profession. Hours: class 1. *Pre-requisite: permission of instructor.* Fall semester. Prof. Ferruzza.

363 Engineering Practices

1 credit. Weekly presentations and discussions by students and faculty of practices, techniques, and topics in the engineering profession. Hours: Lecture 1. *Prerequisite: permission of the instructor.* Fall semester. Prof. Ferruzza.

421, 422 Quantum Physics I, II

3 credits. **(Old Core)** Quantum theory, including the formalisms of Schrodinger, Heisenberg, and Dirac; the uncertainty principles; quantum solutions to problems in classical mechanics; spin-1/2 systems; scattering theory perturbation theory; atomic physics; Bose-Einstein and Fermi-Dirac statistics for many-particle systems; and the interaction of radiation with matter. Hours: lecture 3. *Prerequisites: Physics 221, 301, and 302.* Fall semester, spring semester. Prof. Stuckey.

423 General Relativity

3 credits. **(Old Core)** The theory of general relativity, including the Schwarzschild and Kerr-Newman black holes, the Robertson-Walker cosmology, weak fields and gravity waves. Hours: lecture 3. *Prerequisites: Mathematics 321, Physics 221 and 302 or permission of the instructor.* Fall semester, alternate years. Staff.

471-472 Topics in Physics

3 credits. **(Old Core)** Topics in physics not covered in other courses. Hours: lecture 3. *Prerequisite: Permission of the instructor.* Alternating Fall and Spring semesters. Staff.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of the instructor.* Staff.

491-492 Research Physics I, II

3 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of the instructor.* Fall semester, Spring semester. Staff.

DR 115 Graphics and Descriptive Geometry I

2 credits. Study of engineering-related drawing, including constructions, lettering, orthographic projection, sketching, dimensioning, and pictorial drawing. Hours: lecture 1, laboratory 5. Fall semester. Prof. Ferruzza.

DR 116 Graphics and Descriptive Geometry II

3 credits. A continuation of Drawing 115. Topics include spatial relationships of points, lines and planes, intersections of objects, developments, cartography, vectors, graphs. Instruction and practical exercises are given in computer aided drafting (CAD). Hours: lecture 1, laboratory 7. *Prerequisite: Drawing 115.* Spring semester. Prof. Ferruzza.

Earth Science

ES 105 Field Earth Science

8 credits. **(Old Core)** An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite: Permission of the instructor.* Summer session. Prof. Thompson.

ES 111 The Dynamic Earth

4 credits. **(Old Core)** An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity and geological time. Hours: lecture 3, laboratory 2. Fall semester, Spring semester. Prof. Thompson.

ES 112* The Geology of Landscape

4 credits. **(The Natural World and Old Core)** The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. Fall semester. Prof. Thompson.

ES 115 Meteorology

4 credits. **(Old Core)** General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Laboratories include collection and analysis of weather and climatic data, use of special charts and maps, and establishment of physical principles through experiment. Hours: lecture 3, laboratory 2. Fall and spring semesters. Prof. Thompson.

ES 370-379 Special Topics in Earth Science

Variable credits. **(Old Core)** Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite: Permission of the instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. **(Old Core)** Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of the instructor.* Prof. Thompson.

Department of Political Science

Professors Gottfried, Selcher (*Chair*)
Associate Professors McClellan, McDonald

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the depart-

ment seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessperson. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 111, 112, 222, 245, 330, 351, and 361, Sociology 331, and twelve credits of political science electives. In addition, at least one semester of a modern foreign language at the 112 level or higher is required. General electives from the other social sciences are encouraged.

For a minor in political science, the student must successfully complete 21 hours of course work, composed of the following political science courses: 111, 112, 222, 245, and 351 or 361, and two elective 300/400-level courses. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/ public relations: Political Science 318, 323; (2) law/paralegal/ criminal justice: Political Science 311, 326; (3) international affairs: Political Science 345, 352, 353, 444; (4) political theory: Political Science 324, 326; (5) public administration: Political Science 471; and (6) business administration: Political Science 366.

Students majoring in political science may elect a *concentration in public administration*. This includes Political Science 471; Business Administration 370 (Decision-Making in the Public Sector); Economics 101; and Sociology 360. Students not majoring in political science may choose a minor in public administration, and should consult the interdisciplinary section of this catalog for further information.

The Department participates in the *secondary school certification in social studies program* and the *forestry and environmental management major*, offering a political science concentration in each. (See the detailed descriptions in the interdisciplinary section of this catalog.)

105* Western Political Heritage

3 credits. **(Value and Choice and Old Core)** An introduction to the major political thinkers of the Western political tradition from Plato to Lenin. Justice, equality, rights, freedom, order and community are among some of the ideas to be examined from a variety of critical and historical perspectives. Prof. McDonald.

111* American National Government

3 credits. **(The Social World and Old Core)** Analysis of the development of the U.S. Constitution, the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Prof. McClellan.

112 State and Local Government

3 credits. **(Old Core)** Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Spring semester. Prof. McClellan.

222 Political Theory

3 credits. **(Old Core)** Analysis of the development of significant political ideas from the Greek city-state to the present. Spring semester. Prof. McDonald.

245 International Relations

3 credits. **(Old Core)** Survey of the basic units of analysis, concepts, and principles of global international relations, with emphasis on the formulation and implementation of foreign policy in the context of political, economic, military, and cultural factors. Prof. Selcher.

311 Constitutional Law

3 credits. **(Old Core)** History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Fall semester 1990. Prof. Gliptis.

313 The American Presidency

3 credits. **(Old Core)** An examination of the development of the modern presidency as institution, symbol, and policy-maker. Topics to be covered include the nature of presidential power, the institutional presidency, relations with the public and governmental institutions in the U.S., and policy leadership in foreign and domestic affairs. Prof. McClellan.

316 The American Electoral Process (Campaign '92)

3 credits. **(Old Core)** Analysis of the process of recruiting, nominating, and electing candidates for national office in the U.S., the major participants in national elections, and the impact of elections on public policy-making. Prof. McClellan.

318 Mass Media and American Politics

3 credits. **(Old Core)** Analysis of the role and influence of the mass media in American politics, emphasizing the development of the media industry and its relations with government, the political communications process, and the impact of the media on public opinion, elections, and public policy-making. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. **(Old Core)** An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects for nuclear war are among some of the topics examined. Fall semester. Prof. McDonald.

324 Modern Ideologies

3 credits. **(Old Core)** A survey of Marxism, socialism, anarchism, liberalism and conservatism, and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

326 American Political Thought

3 credits. **(Old Core)** Historical analysis of major American political thinkers from the Puritans to the present with special consideration given to the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. Prof. Kraybill.

345 American Foreign Policy

3 credits. **(Old Core)** U.S. foreign relations since World War II, within an integrated analytical approach to identify the characteristic processes of decision-making and the patterns of those decisions over the decades. Prof. Selcher.

351 Comparative Governments

3 credits. **(Old Core)** A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

352 Latin-American Politics

3 credits. **(Old Core)** Political culture and processes, with country studies and development models to illustrate political styles and approaches to current issues. Spring semester. Prof. Selcher.

353 Politics of Developing Nations

3 credits. **(Old Core)** An interdisciplinary analysis of issues of political development, with application to specific case studies of contemporary nation-building in transitional societies. Prof. Selcher.

361 Public Administration

3 credits. **(Old Core)** A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

366 Government and Business

3 credits. **(Old Core)** An examination of relations between the public and private sectors, and of specific public policies toward business such as antitrust, economic and social regulation, and trade. Prof. McClellan.

370-379 Special Topics

3 credits. **(Old Core)** Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

444 U.S. Security Policy

3 credits. **(Old Core)** Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite: Political Science 245 or 345 or permission of instructor.* Spring semester. Prof. McDonald.

471 Capital Semester Internship

6 credits. Applied field experience in politics and public administration for state or local government agencies, the state legislature, and private political organizations. *Prerequisites: Political Science 361 and permission of instructor.* Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Professor Ellsworth (*Chair*)

Associate Professors Dennis, Eiserer, Teske

Assistant Professor Rider

Bachelor of Arts

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers the Bachelor of Arts degree. The department also offers a minor in psychology and an concentration for students pursuing the secondary education certification in social studies (see the interdisciplinary section of this catalog).

Courses required for the *bachelor of arts* degree are Psychology 105, 106, 213, 218, 222, 225 and 425 or 235 and 435, 317, 321, 402, and 413 or 414.

Courses required for the *minor* are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/ 400) courses. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

105* General Psychology

3 credits. **(The Social World and Old Core)** An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. **(Old Core)** The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105.* Spring semester. Prof. Ellsworth.

201 Addictions

1 credit. The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite: Psychology 105 or permission of the instructor.* Prof. Overdurf.

213 Research Methods

4 credits. **(Old Core)** The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105* Fall semester. Prof. Ellsworth.

218 Psychological Statistics

3 credits. Statistics in psychology, including percentiles, standard scores, t-tests, analysis of variance, correlation, regression and prediction, Chi square and other selected procedures. Emphasizes statistical reasoning, as well as application to psychological contexts. *Prerequisite: Psychology 213.* Spring semester. Prof. Ellsworth.

222 Physiological Psychology

3 credits. **(Old Core)** Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite: Psychology 105.* Spring semester. Prof. Eiserer.

225 Developmental Psychology

3 credits. **(Old Core)** Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite: Psychology 105.* Prof. Rider.

235 Social Psychology

3 credits. **(Old Core)** The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as self-perception, impression formation, attitudes, social influence, aggression, relationships, inter-personal communication, and environmental transaction. *Prerequisite: Psychology 105.* Prof. Teske.

252 Psychology of Music

2 credits. Study of acoustics and the Psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor* Spring semester.

317 Learning

4 credits. **(Old Core)** Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 213.* Fall semester. Prof. Eiserer.

321 Theories of Personality

3 credits. **(Old Core)** A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite: Psychology 105 and permission of the instructor.* Fall semester. Prof. Teske.

322 Abnormal Psychology

3 credits. **(Old Core)** A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite: Psychology 105.* Spring semester. Prof. Dennis.

334 Exceptional Children and Youth

3 credits. **(Old Core)** A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite: Psychology 225 or permission of instructor.* Spring semester. Prof. Rider.

370-379 Special Topics

Variable credit. **(Old Core)** Study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite: permission of instructor.* Staff.

401 Counselling Psychology

3 credits. **(Old Core)** An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites: Psychology 105 and permission of instructor.* Fall semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. **(Old Core)** A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite: Psychology 105.* Fall semester. Prof. Dennis.

413 Perception

3 credits. **(Old Core)** A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 or permission of the instructor.* Spring semester. Prof. Eiserer.

414 Memory and Thinking

3 credits. **(Old Core)** A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 or permission of the instructor.* Prof. Ellsworth.

425 Advanced Development Psychology

3 credits. **(Old Core)** A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project. *Prerequisites: Psychology 213, 225, and junior standing, or permission of the instructor.* Prof. Rider.

435 Advanced Social Psychology

3 credits. **(Old Core)** A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites: Psychology 213 and 235 or permission of instructor.* Fall semester. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites: Psychology 105 and permission of instructor.* Prof. Dennis.

480-489 Independent Study

Variable credit. **(Old Core)** This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite: permission of instructor.* Staff.

491-492 Research Practicum

Variable credit. **(Old Core)** Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites: Psychology 213 and permission of instructor.* Staff.

Department of Religious Studies

Professors: Clemens, Durnbaugh, Kraybill,
Puffenberger (*Chair*)
Associate Professor Crocker
Assistant Professor Bucher

Bachelor of Arts

The Department of Religious Studies seeks to broaden the student's liberal education by pursuing creative ventures

which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a pluralistic religious milieu. Because of this diversity, the study of religion includes a variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religious Studies major is designed to serve as a preprofessional foundation for those students wishing to pursue study beyond the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields). The student plans a major in consultation with the department faculty and chair to assure a balanced blend of courses in several subject areas.

A *major* in Religious Studies consists of twelve courses (36 hours) which includes the three-hour Senior Research Project/Thesis. The program of study must include at least one course from each of the following four categories: biblical studies, ethics and theology, comparative religions, and peace studies. The Department of Religious Studies requires the study of a modern foreign language at the college level for one full year. Any student planning to pursue graduate work should also take Greek and/or Hebrew.

A *minor* in Religious Studies consists of eight courses (24 hours). One's selection must include at least three of the above listed categories.

See Interdisciplinary Programs for the details of the minor programs in "Peace and Conflict Studies" and "Anabaptist and Pietist Studies."

101* The Religious Literature of Ancient Israel

3 credits. **(Cultural Heritage and Old Core)** An introduction to the literature of ancient Israel (i.e., the Jewish Tanakh/Christian Old Testament), focusing on developing skills of historical-critical exegesis. Prof. Bucher.

102* The Religious Literature of Early Christianity

3 credits. **(Cultural Heritage and Old Core)** An introduction to the literature of early Christianity, primarily that found in the New Testament. The course focuses on the development of the skills of historical-critical exegesis. Prof. Bucher.

105* Forms of Religious Experience

3 credits. **(Value and Choice and Old Core)** A survey of the basic categories needed for an understanding of religious phenomena.

Attention given both to formal expressions and substantive experiencing, with emphasis upon mystical intuition. Myth, symbol, and imagery is of special interest. Prof. Clemens.

165* Introduction to Peace and Conflict Resolution

3 credits. **(Value and Choice and Old Core)** The foundation course in the peace studies minor. Investigates causes of conflict and alternate modes of resolution, including mediation. Prof. Clemens.

170-179 Special Topics in Religion

3 credits. **(Old Core)** Courses of an experimental nature offered occasionally at the freshman-sophomore level. Includes such topics as: The Social World of Ancient Israel, The Social World of Early Christianity, etc. Staff.

201 Ancient Near Eastern Religions

3 credits. **(Old Core)** Introduces the major religious traditions of the ancient Near East: the religions of the Sumerians, Babylonians, Assyrians, Canaanites, Israelites, and Egyptians. It examines the theology, worldview, and religious practices of each of these traditions. Prof. Bucher.

202 Archaeology and the Bible

3 credits. **(Old Core)** Introduces the basic principles, techniques, and theoretical assumptions of archaeology as practiced in the Middle East. Surveys the major archaeological discoveries that have shed light on the Bible and biblical history. *Prerequisite: permission of the instructor.* Prof. Bucher.

205 Contemporary Religious Issues

3 credits. **(Old Core)** A survey of relevant problems and issues on the contemporary American religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism in America. Staff.

215 Social Ethics

3 credits. **(Old Core)** The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens.

221 Western Religions

3 credits. **(Old Core)** An introduction to the major religious traditions of the Near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. **(Old Core)** An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shintoism. Prof. Puffenberger.

225 Anabaptist and Pietist Movements

3 credits. **(Old Core)** A study of the European historical and theological backgrounds of the Anabaptist and Pietist movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Prof. Durnbaugh.

230 Religion in America

3 credits. **(Old Core)** Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, as well as the identity and integrity of each separate tradition. Prof. Clemens.

255 Business Ethics

3 credits. **(Old Core)** A critical analysis of contemporary ethical dilemmas in the context of American business practice. Utilizes normative ethical theory, Kohlberg's model of moral development, and case study analyses as a way to clarify competing ethical principles and to evaluate differing ethical judgments. Prof. Puffenberger.

310 Biblical Perspectives on Peace and Justice

3 credits. **(Old Core)** An examination of the ways in which the values of peace and justice were understood and practiced in the ancient Israelite and early Christian communities. *Prerequisite:* *Rel 101 or 102 or permission of the instructor.* Prof. Bucher.

315 Issues in Death and Dying

3 credits. **(Old Core)** A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. Presupposes the notion that the best preparation for life is an in-depth study of its nonexistence. *Prerequisite:* *permission of the instructor.* Prof. Puffenberger.

335 Renaissance and Reformation History (History 315)

3 credits. **(Old Core)** A study of the civilization of the Renaissance in Italy, with emphasis on Florence, Erasmus, and the Protestant Reformation of the sixteenth century. Prof. Durnbaugh.

351 Religion and Violence

3 credits. **(Old Core)** A study of the reasons for hatred and war as well as a survey of the tension between patriotism and faith as found in the traditional and quasi-religions of our day. Critically examines the ideas of just war, pacifism, non-violent resistance, etc. Prof. Puffenberger.

355 Bio-Ethics

3 credits. **(Old Core)** A critical examination of the ethical problems that arise in the practice of medicine and the pursuit of biological and medical research. Its case study approach wrestles with the task of determining not only how ethical principles apply, but how to order the principles when not all of them can be followed. Prof. Puffenberger.

357 The Church's Role in Social Change

3 credits. **(Old Core)** Combines historical and topical consideration of the church's posture toward the state and social change. An applied section views current tense situations in order to arrive at a tenable position on the church's role. Prof. Clemens.

361 Anabaptist and Pietist Groups to 1850 (Sociology 361)

3 credits. **(Old Core)** Introduces the spectrum of groups: Brethren, Mennonites, Amish, Inspirationalists, Moravians, The Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Notes their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival and revolution. Prof. Durnbaugh.

362 Anabaptist and Pietist Groups since 1850 (Sociology 362)

3 credits. **(Old Core)** Examines the processes of adaptation, schism, and withdrawal in these groups as they respond to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren, and Mennonite); defensive and accommodation processes; and contemporary religious expressions. Prof. Durnbaugh.

363 Pacifism Among Anabaptist and Pietist Groups (Sociology 363)

3 credits. **(Old Core)** Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government, the pacifist compromises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to civil rights and justice issues. Probes growing interdenominational and international peace discussions and cooperations in the 1980's. Prof. Durnbaugh.

364 Amish Society (Sociology 364)

3 credits. **(Old Core)** An introduction to the history, culture, and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society (Sociology 365)

3 credits. **(Old Core)** Beginning with a review of sociological theory on modernization, this course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience for the Anabaptist and Pietist Studies minor, this seminar's topics and groups will vary from year to year. *Prerequisite:* *permission of the instructor.* Prof. Kraybill.

370-379 Special Topics in Research

3 credits. **(Old Core)** Courses offered occasionally on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest. Includes such topics as: Liberation Theology; Evangelical Theology; Civil Religion; Esoteric Religions; Utopian Communities; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; Prophecy and Apocalyptic Thought; Wisdom Literature; Islamic Thought; Eastern Scriptures; Biblical Hebrew; New Testament Greek; Jesus and the Gospel Tradition; Mysticism; Psychology and Religion; etc. Staff.

465 Directed Research Project (for Peace Studies minors)

3 credits. A capstone seminar designed to integrate previous work and produce a major research paper. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religious Studies minors by special request. Staff.

490 Senior Research Project/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Sociology and Anthropology

Professor Kraybill

Associate Professor Lehr (*Chair*)

Assistant Professors Dorsten, Wheelersburg

Bachelor of Arts in Sociology-Anthropology

The program of this department provides for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social services, law, and business administration. Some move directly into careers in personnel work,

social research, adult and juvenile probation, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers a major in sociology-anthropology that leads to a bachelor of arts degree. The department also offers a minor in sociology and a concentration in anthropology and Anabaptist and Pietist studies.

The major in sociology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities.

The department also participates in the secondary education certification in social studies offering sociology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A sociology-anthropology major requires Sociology 101, 202, 203, 330, 331, 364, 498 and Anthropology 201, 202, and 360 plus a minimum of two other courses in Sociology, Anthropology, or Anabaptist and Pietist Studies.

The Anabaptist and Pietist Studies Concentration (12 hours) requires Sociology 361, 362, 365, and 363 or 364 or 481.

The Anthropology Concentration (12 hours) requires Anthropology 101, 306, 308 and one elective Anthropology course.

The Sociology minor requires 18 hours of course work including Sociology 101, 202, 203, 330, and 331, and 3 credit hours of sociology electives.

Sociology

101* Discovering Sociology

3 credits. **(The Social World and Old Core)** An introductory course to the social world which presents an understanding of society and its impact on the individual. Using the sociological perspective, this course offers students an understanding of social reality, processes, and explanations. Staff.

202 Sociological Theory

3 credits. **(Old Core)** An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, including structural-functionalism, Marxism and interactionism, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite: Sociology 101.* Staff.

203 Social Organization

3 credits. **(Old Core)** A thorough analysis of the culture, structure, and change of contemporary industrial societies. Specific topics include the rational and nonrational bases of industrial society, work and leisure, politics, structured inequality and social movements. *Prerequisite: Sociology 101.* Staff.

215 Criminology

3 credits. **(Old Core)** Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Alternate fall semesters. Staff.

220 Race and Ethnic Relations

3 credits. **(Old Core)** Study of racial and other minorities in the United

States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Staff.

237 Group Dynamics

3 credits. **(Old Core)** A consideration of empirical research in group dynamics within the larger attempt to integrate a theoretical understanding of group dynamics with its experiential applications to everyday life. Staff.

301 Social Issues

3 credits. **(Old Core)** A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Staff.

305 Marriage and the Family

3 credits. **(Old Core)** A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 Sociology of Religion

3 credits. **(Old Core)** An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

330 Methods of Social Research (Political Science 330, Social Work 330)

3 credits. **(Old Core)** Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisite: Sociology 101.* Fall semester. Prof. Kraybill.

331 Social Statistics

3 credits. **(Old Core)** Application of the concepts, probability and statistics to particular statistical procedures used in social research and analysis. *Prerequisite: Sociology 330, Political Science 330 or Social Work 330.* Spring semester. Prof. Kraybill.

342 Modern Corrections

3 credits. **(Old Core)** An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Alternate spring semesters. Staff.

358 Sociology of War and Peace

3 credits. **(Old Core)** A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Prof. Kraybill.

360 Organizations in Modern Society

3 credits. **(Old Core)** An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Prof. Kraybill.

361 Anabaptist and Pietist Groups Prior to 1850

3 credits. **(Old Core)** Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Prof. Durnbaugh.

362 Anabaptist and Pietist Groups Since 1850

3 credits. **(Old Core)** Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in

cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Prof. Durnbaugh.

363 Pacifism among Anabaptist and Pietist Groups, 1525-1985

3 credits. **(Old Core)** Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government; the pacifist compromises of Moravians while protecting Indian converts; and the tensions between loyalty promised to the crown and the Revolutionary War Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Fall semester. Prof. Durnbaugh.

364 Amish Society

3 credits. **(Old Core)** An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Fall semester. Prof. Durnbaugh.

365 Anabaptist and Pietist Groups in Modern Society

3 credits. **(Old Core)** Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience, the course will be conducted as a seminar with the topics and groups varying by year. Spring semester. *Prerequisite: Permission of the instructor.* Prof. Kraybill.

371-380 Special Topics in Sociology

3 credits. **(Old Core)** Readings and discussion of topical areas of sociology. Topics may include, but not limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of the instructor.* Staff.

481-490 Independent Study in Sociology

Variable credit. **(Old Core)** Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of the instructor.* Staff.

498 Senior Seminar

3 credits. **(Old Core)** The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of the instructor.* Spring semester. Staff.

Anthropology

101* Understanding Human Cultures

3 credits. **(Foreign Cultures and International Studies and Old Core)** A comprehensive survey of the peoples and cultures of the world with special emphasis upon four interrelated cultural systems: knowledge, technology, social organization, and ideology. Fall semester. Prof. Lehr.

201 Physical Anthropology

3 credits. **(Old Core)** An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. Fall semester. Prof. Lehr.

202 Cultural Anthropology

3 credits. **(Old Core)** An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

306 Indians of North America

3 credits. **(Old Core)** A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Prof. Lehr.

307 Peoples and Cultures of Africa

3 credits. **(Old Core)** Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. **(Old Core)** Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. **(Old Core)** Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Wheelersburg.

371-380 Special Topics in Anthropology

3 credits. **(Old Core)** Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Staff.

Department of Social Work

Assistant Professor V. Bergel (chair)

Assistant Professor L. Martin

Bachelor of Arts

Social Work is a multi-faceted profession concerned with change both on an individual, community, and national level. Within the framework of a liberal arts tradition, Elizabethtown's social work program prepares the student for entry into professional social work practice or graduate school. The program is based on an understanding of generalist practice which allows the graduate to choose from a wide range of social service careers.

The *major* in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. The program is accredited by the Council on Social Work Education.

The program provides an extensive opportunity for field experience, beginning with the sophomore year. The major culminates with 600 hours of field instruction during the student's senior year. Field experiences are

arranged to meet the student's individual interest. Field experiences include but are not limited to such areas as child welfare, corrections, mental health, rehabilitation, health care, schools, and aging.

The Social Work Major requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. Two reference rating forms completed by persons who know the applicant well and a short essay describing the applicant's interest in the field of social work.
3. Formal admittance to Elizabethtown College.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The *Social Work Major* requires the following courses: Biology 105, Sociology 101, 220, Psychology 105, Political Science 111, Economics 101, Mathematics 151, Modern Language 112, Social Work 151, 233, 240, 280, 330, 367, 368, 369, 401, 470, 471, and 498.

151 Introduction to Social Welfare

3 credits. The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites: Sociology 101, Psychology 105.* Spring semester. Prof. Martin.

233 Human Behavior in the Social Environment

3 credits. A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Sociology 101, Psychology 225.* Fall semester. Prof. Rose-Romm.

240 Basic Helping Processes

3 credits. Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

280 Rural & Urban Social Welfare Systems

3 credits. A comparison of urban and small town rural areas. The development and organization of rural and urban communities; their network of services designed to address community, family, and individual problems; community development and administration of social service programs. *Prerequisite: Social Work 151.* Spring semester. Prof. Bergel.

330 Methods of Social Work Research (Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project.

Prerequisite or co-requisite: Mathematics 151. Fall semester. Prof. Kraybill.

339 Human Sexuality

3 credits. A study of socio-sexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Staff

344 Aging: Social Response and Implications

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Staff.

355 Women in Society

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Prof. Rose-Romm.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Prof. Martin.

366 Addiction and Society

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 240.* Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367.* Spring semester. Prof. Martin.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Co-requisite: Social Work 368.* Spring semester. Prof. Martin.

371-380 Special Topics in Social Work

3 credit. Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social economic, and political systems. *Prerequisites: Political Science 111, Economics 101.* Fall semester. Prof. Martin.

470 Introductory Field Instruction

3 credits. Supervised field instruction for a least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. Fall semester. Prof. Martin.

471 Advanced Field Instruction

12 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and

program planner. *Prerequisite:* permission of instructor; *co-requisite:* Social Work 498. Spring semester. Prof. Martin.

481-490 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite:* permission of instructor. Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite:* Social Work 470; *co-requisite:* Social Work 471. Spring semester. Prof. Bergel.

Spanish

See Department of Modern Languages, page 46.

Theatre

See Department of Fine and Performing Arts, pages 37.



Interdisciplinary Programs

Premedical and Other Health Professions Programs

Martin O.L. Spangler (*Chair, Health Professions Advisory Committee*)

Members: John A. Campbell, Jr., James L. Dively, Fred Hoffman, Paul Peterson, Frank Polanowski, Zoe Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions schools and/or students. *The biology pre-medical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on Page 18. A second route is the *bachelor of science degree* in biochemistry (see Page 18). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown, he or she will follow a curriculum similar to that outlined below, with minor variations depending upon several factors, such as starting level in English and mathematics. After completion of the freshman year, all students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Seven faculty members are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into schools of medicine; (2) to advise students on registration and preparation for medical school admissions tests; (3) to assist students in the preparation and submission of applications to medical schools; (4) to draft a composite

letter of evaluation and endorsement for worthy candidates and to forward this information to the appropriate medical school admissions committees; (5) to offer assistance in preparing for medical school interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical school placement for advising and administrative purposes.

The premedical student should introduce him or herself to the Health Professions Advisory Committee early in the freshman year and formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. Forms for this registration are available from the Chair of the Committee. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during the spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During April of the junior year, the Committee will hold interviews with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. The Committee will also use information from the student's registration form and from letters of recommendation and endorsement that the student has solicited from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical school admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process him or herself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that premedical students notify the Committee of changes in status of their applications so

that the Committee can plan for this important stage of the admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

Representative First-Year Courses

Credits	Fall Semester
4	Biology 111
4	Chemistry 113
3	English*
4	Mathematics 121**
1	Physical Education

Credits	Spring Semester
4	Biology 112
4	Chemistry 114
3	English
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education

core-biology major, and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University in Philadelphia. After completing sufficient credits so that the total with those earned at Elizabethtown College will be at least 125, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

For additional details, the student should confer with Dr. Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a Bachelor of Science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's Core Program in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program requirements and earning at least 101 credits before transferring to Duke. The student spends at least two years at Duke's School of Forestry and Environmental Studies. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional two or three semesters, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an

evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews.

There are variations of the schedule herein described. For additional details, the student should confer with Prof. Laughlin.

Majors shall complete all Core Program requirements for the bachelor of science degree. Within the Core areas, the following courses should be taken:

Mathematical Analysis Core (three hours): Mathematics 151 or 121. If 151 is not taken for core, it is strongly recommended as an elective. If 121 is not taken for core, Math 117 will satisfy the calculus requirement, but not core.

Natural World Core (eight hours): Biology 111 and Chemistry 101.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313, 313L, 321, and two courses from Biology 215-215L, 235, 331, 332, or 347. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111, 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 101, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political Science 111, 112, 361, 366, 471. Minor concentration recommendations are Political Science 361, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they

may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry* 101, 201; Physics* 101, 102; two courses from Earth Science 111, 112, 115; Mathematics 101 and 121, or 151 and 117 or 121; Psychology** 105; Education 305, 308, 309, 310, 415, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113 114, 213, 214; and eight hours from among Chemistry 116, 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology* 111, 112; two courses from Earth Science 111, 112, 115; Physics* 101, 102; Mathematics 101, 121, 122; Psychology** 105; Education 305, 308, 309, 310, 415, 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 204, 221, 221L, 241; one additional course in physics or drawing; two courses from Biology* 105, 106, 108; Chemistry* 101, 104; two courses from Earth Science, 111, 112, 115; Mathematics 101, 121, 122; Psychology** 105; Education 305, 308, 309, 310, 415, 473.

*Count towards **Natural World** Core Program requirement.

Satisfies one of the two courses for **Social World Core Program requirement.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political

science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are:

Students must take one 24-hour major, and two courses in each of the four cognate areas. All students must take the professional education sequence Psychology 105; Education 215, 305, 308, 309, 415, and 473. Consultation with your advisor is suggested for appropriate courses in the subject matter areas.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics.

History: The 24-hour major must include History 115, 201, 202, 390, one European history course beyond 115; one non-United States, non-European history course, and six elective hours in history.

Political Science: The 24-hour major must include Political Science 111, 112, 222, 245, 351, 330, and six elective hours in political science.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 225, 235, 321, 322 and 370.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 202, 203, 330, Anthropology 202, and nine hours planned in consultation with and approved by the social studies advisors in the Departments of Sociology and Education.

Anabaptist and Pietist Studies Minor

The interdisciplinary minor in Anabaptist and Pietist Studies consists of 18 credit hours. The curricular model incorporates three types of courses: a required introductory course (3 hours.); elective courses in a variety of disciplines (12 hours.); and a capstone seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

The introductory course (Rel 225) is designed to orient

students to the European historical and theological roots of the Anabaptist and Pietist movements. The elective courses, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which draws on the resources of three academic disciplines. The *capstone course* (Rel/Soc 365) is a seminar experience which requires students to integrate and synthesize the insights from several disciplines in a major research writing project. At least two faculty members from differing academic disciplines will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. *Program advisor*: Dr. William Puffenberger.

Minor Requirements

- A. One *required* introductory course (3 hours.)
 Rel 225 Anabaptist and Pietist Movements
- B. Four *elective* courses from the following list (12 hours.)
 Rel 230 Religion in America
 Rel 335/His 315 Renaissance and Reformation History
 Rel 361/Soc 361 Anabaptist and Pietist Groups to 1850
 Rel 362/Soc 362 Anabaptist and Pietist Groups since 1850
 Rel 363/Soc 363 Pacifism Among Anabaptist and Pietist Groups
 Rel 364/Soc 364 Amish Society
- C. One *required* capstone research seminar (3 hours.)
 Rel 365/Soc 365 Anabaptist and Pietist Groups in Modern Society

Peace and Conflict Studies Minor

The interdisciplinary minor in Peace and Conflict Studies consists of 18 credit hours. The curricular model incorporates three types of courses: required introductory courses (6 hours.); elective courses in a variety of disciplines (9 hours.); and a capstone, integrative seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

In order to provide students with adequate conceptual tools and conciliation skills, the program of study is multidisciplinary in both method and instruction. The *introductory courses* orient students to basic concepts and approaches in Peace and Conflict Studies as well as the history of nonviolence. The *elective courses*, selected from

specified courses in several disciplines, enable students to shape a personal program of emphasis which taps the analytic resources of various academic fields. The *capstone course elective* requires students to synthesize concepts and knowledge from several disciplines in order to address a research problem of practical or theoretical interest. At least two faculty members, representing different academic fields, will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. *Program advisor*: Dr. William Puffenberger.

Minor Requirements

- A. Two *required* introductory courses (6 hours.)
 Rel 165 Introduction to Peace and Conflict Resolution
 Hi 321 History of Nonviolence
- B. Three *elective* courses from the list below (9 hours.). No more than two elective courses shall be chosen from any one department. At least two of the elective courses must be taken outside the student's major department.
 Com 301 Interpersonal Communication
 PS 245 International Relations
 PS 345 American Foreign Policy
 Psy 235 Social Psychology
 Rel 310 Biblical Perspectives on Peace and Justice
 Rel 351 Religion and Violence
 Rel 357 The Church's Role in Social Change
 Soc 350 Sociology of War and Peace
 Soc/Rel 363 Pacifism Among Anabaptist and Pietist Groups
- C. A required *capstone* seminar designed to integrate previous work and culminate in a major research paper.
 Rel 465 Directed Research Project

International Studies Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign culture, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in

the rest of the world which are making themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The Business Department has an international business concentration designed specifically for business majors. Details of this option can be obtained from the Business Department. The structure of the minor for all other majors consists of:

1. *Foreign language competency*: 6 semester hours in oral expression, textual analysis, and composition beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level I + on the ACTFL/ETS scale.
2. *Three required foundation courses* (9 hours):

An 111	Understanding Human Cultures
Ec 307	International Economics* or
Ec 371	Economic Development or
Ec 372	International Political Economy
	(only one economics course may be selected)
PS245	International Relations
3. *Four elective courses* (12 hours) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 317	International Marketing
BA 371	International Business Management
BA 469	International Comparative Management
Com 372	International Communications
Ec 307	International Economics*
Ec 308	Comparative Economic Systems*
Ec 371	Economic Development*
Ec 372	International Political Economy
Fr/Ge/Sp	Making of Modern Society
	311
Fr/Ge/Sp	Languages for the Professions
	312A & 312B
Hi 205	Modern Far East
Hi 216	English History since 1603
	(Modern Britain)
Hi 218	Europe in the Twentieth Century
Hi 320	History of the Soviet Union
Hi 323	History of China
Hi 324	History of Japan
Hi 327	History of Africa
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
PS 351	Comparative Governments

PS 345	American Foreign Policy
PS 352	Latin American Politics
PS 353	Politics of Developing Nations
PS 444	United States Security Policy
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The director of International Studies (Professor Wayne Selcher) will help the student with course selections. With the exception of courses specifically required for the major (e.g., Political Science 245 for Political Science majors), courses in the minor must be selected from core courses or free electives. Completion of the minor is indicated on a student's transcript.

Pre-Law Program

Chairman of the Pre-law Committee: H. Herbert Poole (*History*).

Members of the Committee: James L. Dively (Biology), Paul Gottfried (*Humanities*), George A. Giptus (*Business*), Louis F. Martin (*English*), Anthony M. Matteo (*Philosophy*), E. Fletcher McClellan (*Political Science*), W. Wesley McDonald (*Political Science*), Richard L. Mumford (*History*).

Because the training of a pre-law student may be accomplished in almost any academic discipline, such as English, History, Political Science, Philosophy, or Business, a committee has been established to assist the pre-law student during his undergraduate years.

The Pre-Law Committee works with the pre-law student and the students major advisors to ensure that a reasonable and sound course of study is followed is acceptable for entry into a school of law. The committee collects literature that aids the student in selecting a suitable school, and advises the applicant on the registration and the preparation for the Law School Admissions Test (LSAT). The committee guides the preparation and submission of applications and supervises the requests for letters of recommendation for worthy candidates.

In order to create the most effective curriculum, the pre-law student should introduce himself to the Pre-Law Committee early in the freshman year to discuss future course scheduling and long-term plans.

The Pre-Law Committee also supervises the activities of

the Law Club and works closely with the campus Forensic Team; both activities are highly recommended for pre-law students.

Over the years, the members of the committee have maintained a liaison with the schools of law which are most frequently attended by Elizabethtown College graduates. These include: American University, Antioch College, University of Baltimore, Boston University, University of Bridgeport, Case Western Reserve University, University of Dayton, University of Delaware, Dickinson College, Duke University, Duquesne University, Fordham University, Georgetown University, George Washington University, Hofstra, University of Miami, University of Nebraska, New York Law School, New York University, Ohio Northern University, Oklahoma, Pace, University of Pennsylvania, Pepperdine, Pittsburgh, Rutgers, Saint Mary's University of San Antonio, Syracuse, Temple, University of Toledo, Valparaiso, Vermont Law School, Villanova, Washington and Lee, and William and Mary.

Public Administration Minor

The public administration minor provides knowledge, skills, and experience to students desiring a career in public service. Combined with an appropriate academic

major, the minor prepares students for careers in public management, public policy analysis and administration, legislative affairs, urban and regional planning, international development administration, and related fields. In particular, the minor is designed to provide a necessary background for students who intend to pursue graduate study in public affairs.

The requirements of the minor reflect the interdisciplinary nature of governmental activity. The courses introduce the student to: (1) the political, economic, and organizational environment of the public administrator; and (2) the major activities, responsibilities, and roles of public administrators. An important component of the minor is participation in the Capital Semester Internship Program (Political Science 471), which furnishes internship opportunities with state and local government agencies.

The minor is available to all students except political science majors, who may elect a concentration in public administration within the major. The required courses in the minor are: Economics 101; Political Science 111 or 351, 361 and 471; Business Administration 370 (Decision-Making in the Public Sector); and Sociology 360. Students interested in working for federal, state, or local governments in the United States should take Political Science 111, while students who want to pursue public-sector work outside the U.S. should take Political Science 351. With the exception of Economics 101, courses in the minor may not count toward a student's academic major. For additional information and assistance, contact Dr. McClellan of the Political Science Department.



Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; LL.D., Elizabethtown College (1952-1984)

Louise B. Black, *Associate Professor of English Emerita*
B.S., Elizabethtown College; M.S., Temple University (1968-1988)

I.L. Bossler, *Professor of Mathematics Emeritus*
B.S., Ursinus College; M.S., Purdue University (1959-1989)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1945-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Universite, University of Paris (1966-1973)

Robert B. Garrett, *Assistant Professor of Health and Physical Education Emeritus*
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967-1988)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

A. F. Kish, *Director of the Adult External Degree Program Emeritus*
B.S., Rutgers University; M.S., University of Delaware (1963-1988)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

J. Henry Long, *Associate Professor of Sociology Emeritus*
B.S., Elizabethtown College; B.D., D.D., Bethany Theological Seminary (1969-1988)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Rollin E. Pepper, *Professor of Biology Emeritus*
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964-1990)

Elisabeth D. Shaw Russell, *Associate Professor of English Emerita*
B.A., M.A., Oxford University (1969-1988)

Carl N. Shull, *Professor of Music Emeritus*
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961-1988)

Harry L. Simmers, *Associate Professor of Music Emeritus*
B.S., Bridgewater College; M.M., American Conservatory of Music (1966-1990)

Donald P. Smith, *Assistant Professor of Physical Education Emeritus*
B.S., University of Mississippi (1954-64, 1972-88)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Robert S. Young, *Director of Special Gifts Emeritus*
(1950-1984)

Robert E. Ziegler, *Professor of Science Education Emeritus*
B.A., Bridgewater College; M.R.E., Bethany Seminary; M.S., Ph.D., University of Wisconsin (1966-1988)

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

- Eugene P. Clemens**, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)
- James L. Dively**, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)
- Donald F. Durnbaugh**, *Carl W. Zeigler Professor of Religion and History* (1984)
B.A., Manchester College; M.A., University of Michigan; Ph.D., University of Pennsylvania (1989)
- J. Thomas Dwyer**, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)
- Delbert W. Ellsworth**, *Professor of Psychology* (1988)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)
- Charles Fazzi**, *Edgar T. Bitting Professor of Accounting* (1988)
B.S., M.B.A., Ph.D., The Pennsylvania State University (1988)
- Paul Gottfried**, *Visiting College Professor of Humanities* (1989)
A.B., Yeshiva University; M.A., Ph.D., Yale University (1989)
- John F. Harrison**, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)
- J. Robert Heckman**, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)
- Jack L. Hedrick**, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963)
- Frederic E. Hoffman**, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)
- Otis D. Kitchen**, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)
- Donald E. Koontz**, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)
- Donald B. Kraybill**, *Professor of Sociology* (1984) and *Director of the Galen and Jessie B. Young Center for the Study of Anabaptist and Pietist Groups*.
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)
- Carroll L. Kreider**, *Professor of Business* (1989)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)
- J. Kenneth Kreider**, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964)
- Henry M. Libhart**, *Professor of Art* (1972)
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967)
- Robert C. Moore**, *Professor of Communications* (1989)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983). Sabbatical Leave, Academic Year 1990-1991.
- Richard L. Mumford**, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)
- Zoe G. Proctor**, *Professor of Chemistry* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)
- William V. Puffenberger**, *Professor of Religion* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967). Sabbatical Leave, Academic Year 1990-1991.
- John P. Ranck**, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)
Sabbatical Leave, Academic Year 1990-1991
- D. Paul Rice**, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)
- Wayne A. Selcher**, *Professor of International Studies and Director of International Studies* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969)
- Ronald L. Shubert**, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)
- Martin O. L. Spangler**, *Professor of Chemistry* (1968)
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966)
- Stanley T. Sutphin**, *Professor of Philosophy* (1970)
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963)
- Bela Vassady, Jr.**, *Horace E. Raffensperger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)
- Thomas R. Winpenny**, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)

Associate Professors

- Jill Sunday Bartoli**, *Associate Professor of Education* (1990)
B.A., M.A., University of Kentucky; M.Ed., Shippensburg State College; Ph.D., University of Pennsylvania (1990)
- Terry Blue**, *Associate Professor of Education* (1990)
M.A., Temple University; B.A., Juniata College; Ph.D., Pennsylvania State University (1990)
- Paula R. Boothby**, *Associate Professor of Education* (1990)
A.B., Kalamazoo College; M.A., Western Michigan University; Ed.D., University of North Dakota (1990)
- Richard R. Crocker**, *Dean of College Life and Associate Professor of Religious Studies* (1990)
B.A., M.A., Brown University; M.Div., Ph.D., Vanderbilt University (1990)

- Uldis Daiga**, *Associate Professor of Modern Languages* (1973)
B.S., University of North Carolina; M.A., Temple University (1965)
- Paul M. Dennis**, *Associate Professor of Psychology* (1973)
B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)
- Robert D. Dolan**, *Associate Professor of Mathematics, Clinical Professor in Mathematics Education* (1970)
B.S., California State College; M.A., West Virginia University (1964)
- Darrell R. Douglas**, *Associate Professor of Music* (1972)
B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972)
- Leonard A. Eiserer**, *Associate Professor of Psychology* (1986)
B.A., University of Maine; M.A., Ph.D., Bryn Mawr College (1981)
- Martha A. Eppley**, *Associate Professor of Economics* (1971); *Associate Dean of the Faculty and Registrar* (1979)
B.S., Elizabethtown College; M.B.A., Indiana University (1964)
- Hugh G. Evans, Jr.**, *Associate Professor of Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania State University (1968)
- Boyd Fox**, *Associate Professor of Education* (1973)
B.S., M.S., Ed.D., Utah State University (1970)
- E. Margaret Gabel**, *Assistant to the Director of the Library and Head Cataloguer*
M.S., L.S., Syracuse University
- George A. Gliptis**, *Associate Professor of Business* (1972)
B.S., J.D., University of Virginia (1970)
- Suzanne Schmidt Goodling**, *Associate Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury College (1964)
- Maurice R. Hoppie**, *Associate Professor of Economics* (1987)
B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)
- Jacqueline L. Jones**, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign, OTR/L (1987)
- Yvonne E. Kauffman**, *Associate Professor of Physical Education* (1990)
B.S., Bridgewater College; M.Ed., West Chester State College (1966)
- John E. Koontz**, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)
- Ronald L. Laughlin**, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)
- Thomas R. Leap**, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)
- R. Bruce Lehr**, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)
- E. Fletcher McClellan**, *Associate Professor of Political Science* (1989)
B.A., Franklin and Marshall College; M.A., East Tennessee State University; Ph.D., The University of Tennessee (1982).
Sabbatical Leave, Spring Semester, 1991.
- W. Wesley McDonald**, *Associate Professor of Political Science* (1986)
B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)
- Robert K. Morse**, *Associate Professor of Mathematics* (1971)
B.S., Franklin and Marshall College; M.A., Temple University (1968)
- Stanley R. Neyer**, *Associate Professor of Business* (1972)
B.S., Elizabethtown College; M.B.A., Shippensburg State College (1964)
- D. Kenneth Ober**, *Associate Professor of Physical Education and Director of Athletics* (1972)
B.S., M.S., West Chester State College (1964)
- Lynn S. Orlando**, *Associate Professor of Education* (1988)
B.A., Point Park College; M.Ed., Bloomsburg State College; Ed.D., The Pennsylvania State University (1988)
- Paul Petersen**, *Associate Professor of Occupational Therapy* (1988)
B.S., Syracuse University; M.A., New York University; Ph.D., University of Nebraska at Lincoln, OTR/L (1984)
- Frank P. Polanowski**, *Associate Professor of Biology* (1981)
B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)
- H. Marshall Pomroy**, *Associate Professor of Business* (1971)
B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)
- H. Herbert Poole, Jr.**, *Associate Professor of History* (1982)
B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969) Sabbatical Leave, Academic Year 1990-1991
- Raymond R. Reeder**, *Associate Professor of Chemistry* (1973)
B.S., Case Institute of Technology; Ph.D., Brown University (1969)
- John C. Rohrkemper**, *Associate Professor of English* (1987)
B.A., M.A., Ph.D., Michigan State University (1981)
- Carmine T. Sarracino**, *Associate Professor of English* (1984)
B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973)
- Charles D. Schaeffer, Jr.**, *A.C. Baugher Associate Professor of Chemistry* (1988)
B.A., Franklin and Marshall College; Ph.D., State University of New York at Albany (1976)
- Donald E. Smith**, *Associate Professor of Communications* (1973)
B.S., M.S., State University of New York College at Geneseo (1969)
- John W. Stites**, *Associate Professor of Music* (1976)
B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, *Associate Professor of Business* (1987)

B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut; Ph.D., Temple University (1987)

John A. Teske, *Associate Professor of Psychology* (1990)

B.A., Indiana University; M.A., Ph.D., Clark University (1986)

Glenn H. Thompson, Jr., *Associate Professor of Earth Science* (1973)

B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)

Randolph L. Trostle, *Associate Professor of Business* (1984)

B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)

Barbara C. Tulley, *Associate Professor of Computer Science* (1989)

B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)

Bibhuti S. Yadav, *Visiting Associate Professor of Eastern Religions* (1991)

Assistant Professors

Kurt M. Barnada, *Assistant Professor of Modern Languages* (1988)

B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University. (1988)

David A. Bauman, *Assistant Professor of Education* (1988)

B.A., Goshen College; M.Ed., Millersville University (1988)

Vivian R. Bergel, *Assistant Professor of Social Work and Director of the Social Work Program* (1987)

B.A., M.S.W., West Virginia University (1987)

Cynthia Beyerlein, *Assistant Professor of Business and Director of the Small Business Center* (1985)

B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)

Morteza Bina, *Assistant Professor of Computer Science* (1990)

B.S., Arya Mehr University of Technology; D.E.A., Institut National Polytechnique de Grenoble; M.S., Bowling Green State University; Ph.D., Universite de Technologie de Compiègne. (1990)

Christina A. Bucher, *Assistant Professor of Religion* (1988)

A.B., Elizabethtown College; M.A.Th., Bethany Theological Seminary, Ph.D., Claremont Graduate School (1988)

Jamie M. Byrne, *Assistant Professor of Communications* (1988)

B.S., M.S., Murray State University (1988)

J. Sue Dolan, *Assistant Professor of Business* (1980)

B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

Neil A. Dominas, *Assistant Professor of Communications* (1990)

B.A., University of Rochester; Ph.D., University of Wisconsin-Madison (1990)

Linda Dorsten, *Assistant Professor of Sociology* (1990)

M.A., Ohio State University; B.A., Otterbein College; Ph.D., Ohio State University (1990)

Robert Eugene Ellis, *Assistant Professor of Communications* (1990)

B.A., Carson-Newman College, M.A., Marshall University (1989)

David Ferruzza, *Assistant Professor of Physics and Engineering and Director of the Engineering Program* (1990)

S.M., B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology. (1984)

Milton Friedly, *Assistant Professor of Art* (1990)

A.A., Northwest Community College; B.F.A., Arizona State University; M.F.A., University of Wyoming (1987)

John B. Gaffney, *Assistant Professor of Physics* (1988)

B.A., M.A., Ph.D., Columbia University (1988)

Craig Hergert, *Assistant Professor in Rhetoric and Composition* (1990)

B.A., Concordia College; M.A., University of Missouri-Columbia

Patricia A. Hill, *Assistant Professor of Business* (1988)

B.A., Gettysburg College; M.B.A., University of Baltimore (1988)

Jack Kasar, *Assistant Professor of Occupational Therapy and Clinical Field Supervisor* (1989)

B.A., West Chester University; M.S., Virginia Commonwealth University; Ph.D., University of Pennsylvania, OTR/L (1988)

Beverly A. Kelly, *Assistant Professor of Occupational Therapy* (1988)

B.S., State University of New York at New Paltz; M.A., New York University, OTR/L (1988)

Edmond L. Kiser, *Assistant Professor of Theatre* (1987)

B.S., University of Science and Arts of Oklahoma; B.A., M.A., University of Akron; Ph.D., Wayne State University (1987)

Link Martin, Jr., *Assistant Professor of Social Work* (1989)

B.S., Murray State University; M.S.W., University of Hawaii (1988)

Louis F. Martin, *Assistant Professor of English* (1988)

B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)

Anthony M. Matteo, *Assistant Professor of Philosophy* (1986)

B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

Dana Gulling Mead, *Assistant Professor of English* (1989)

B.A., M.A., University of Tennessee, Knoxville; Ph.D., Texas Christian University (1989)

James J. Moyer, *Assistant Professor of Business* (1986)

B.S., Dickinson College; M.Letters, University of Pittsburgh (1986)

Donald G. Muston, *Assistant Professor of Business* (1977)
B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Jane E. Palmquist, *Assistant Professor of Music* (1990)
R.A., Northern State College; M.A., Ph.D., University of Texas at Austin (1990)

Lawrence W. Polin, *Assistant Professor of Mathematics* (1989)
B.S., St. John's University; Ph.D., State University of New York at Stony Brook (1989)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)
B.A., Gettysburg College; M.S., Ph.D., Vanderbilt University (1988)

Michael J. Rohrbacher, *Assistant Professor of Music Therapy* (1989)
B.M., East Carolina University; M.S., Johns Hopkins University (1989)

Michael Severeid, *Assistant Professor of Communications* (1990)
A.B., Middleburg College; M.A., Central Missouri State University (1990)

Jeannette Roberts Shumaker, *Assistant Professor of English* (1990)
B.A., University of Redlands; M.A., Ph.D., Claremont Graduate School (1990)

William M. Stuckey, *Assistant Professor of Physics* (1988)
B.S., Wright State University; M.S., Ph.D., University of Cincinnati (1988)

Sharon R. Trachte, *Assistant Professor of Modern Languages* (1986)
B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)

Hans-Erik Wennberg, *Assistant Professor of Communications* (1984)
B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Robert P. Wheelersburg, *Assistant Professor of Anthropology, Assistant Dean of the Faculty* (1989)
B.A., Ohio State; A.M., Ph.D., Brown University (1989)

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)
B.A., Bridgewater College (1968)

The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Instructors

Susan G. Bousliman, *Instructor in Communications* (1989)
B.A., Ohio State University; M.Ed., University of Wisconsin-LaCrosse (1987)

Richard L. Evans, *Instructor in Computer Science* (1989)
B.S. University of Louisville; M.S., Naval Postgraduate School (1989)

Sharon K. Farley, *Instructor in Occupational Therapy* (1987)
B.S., Elizabethtown College; M.S., Towson State University; OTR/L (1987)

Adjunct Faculty

On Campus

Sherry Albert, *Department of Occupational Therapy*
Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Joseph Anderson, *Department of Occupational Therapy*
B.S., M.Ed., M.B.A., Pennsylvania State University

Linda Bartholomew, *Department of Occupational Therapy*
B.S., Elizabethtown College

Virginia B. Bates, *Instructor in English as a Second Language*
B.A., Southern Illinois University; M.A., University of California at Los Angeles

Ann S. Dinsmore, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Marcia L. Englar, *Department of Fine and Performing Arts*
B.M., B.M.E., Augustana College; M.M., Peabody Conservatory of The Johns Hopkins University

Darrel Frey, *Department of Physics*
B.S.M.E., Drexel University

Laszlo Geder, *Department of Occupational Therapy*
M.D., Ph.D., University of Debrecen, Hungary

Doris J. Hall-Gulatti, *Department of Fine and Performing Arts*
B.M., Peabody Conservatory of The Johns Hopkins University; M.M., University of Michigan

Cynthia Hess, *Department of English*
B.S., Millersville State College; M.A., Millersville University

Carol Isaaks, *Supervisor of Developmental Studies Program*
B.A., University of Hawaii

Linda Kirkpatrick, *Department of Fine and Performing Arts*
M.M., North Texas State University

David E. Leithmann, *Department of Fine and Performing Arts*
B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University

Warren Minnich, *Department of Sociology/Anthropology*

Grant Moore, *Department of Fine and Performing Arts*

Candace H. O'Donnell, *Department of English, and Clinical Supervisor of English Education*
B.A., Washington University; M.A., Millersville State College

Gretchen N. Patti, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Alison J. Roth, *Department of Fine and Performing Arts*
B.M., Oberlin Conservatory; M.M., New England Conservatory of Music

Janet Rowand, *Department of Occupational Therapy*
B.S., Elizabethtown College; OTR

Steve Rudolph, *Department of Fine and Performing Arts*

Carl E. Schroeder, *Department of Fine and Performing Arts*

Debra D. Seyler, *Department of Fine and Performing Arts*
B.S., M.A., Indiana University of Pennsylvania

Laurie A. Showers, *Department of Mathematical Science*
B.S., Elizabethtown College

William M. Sloane, *Department of Communications*
B.A., York College of Pennsylvania; J.D., Delaware Law School of Widener University; L.L.M., Temple University; S.J.D., Thomas Jefferson College of Law of Heed University

Janice Stouffer, *Department of Fine and Performing Arts*

Catherine K. Strite, *Department of Sociology/Anthropology*

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Carol S. Weavill, *Department of Computer Science*
B.S., Elizabethtown College

James Wirtz, *Department of Political Science*

Judy Williams-Henry, *Department of Fine and Performing Arts*
B.F.A., Boston Conservatory of Music; M.S. Wheelock College

Off Campus Medical Technology

Margaret Black, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S., Lebanon Valley College; M.T. (ASCP)

Sharon Deitrich, *Reading Hospital and Medical Center*, West Reading, Pa.
B.S., Kutztown University

John W. Eiman, *Abington Memorial Hospital*, Abington, Pa.
M.D., University of Pennsylvania School of Medicine

Edward Eisenhower, *St. Joseph Hospital*, Lancaster, Pa.
M.D., Medical University of South Carolina

Gerald Fahs, *Lancaster General Hospital*, Lancaster, Pa.
M.D., Temple University School of Medicine

Janice Fogleman, *Harrisburg Hospital*, Harrisburg, Pa.
M.Ed., Pennsylvania State University; M.T. (ASCP)

Nadine Gladfelter, *Lancaster General Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Susan Herr, *St. Joseph Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Brenda Kile, *York Hospital*, York, Pa.
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, *Harrisburg Hospital*, Harrisburg, Pa.
M.D., Airlangga University School of Medicine

John A. Mihok, *Monmouth Medical Center*, Long Branch, N. J.
B.S., University of Maryland; Catholic University of America; S.M. (ASCP)

Julian W. Potok, *Polyclinic Medical Center*, Harrisburg, Pa.
D.O., Philadelphia College of Osteopathic Medicine

Lynn Russell, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S. Springfield College; B.S. Towson State College; M.A., Central Michigan University; M.T. (ASCP)

Barbara Scheelje, *Abington Memorial Hospital*, Abington, Pa.
B.S., Colby-Sawyer College; M.T. (ASCP)

I. Donald Stuard, *Reading Hospital and Medical Center*, West Reading, Pa.
M.D., University of Rochester School of Medicine

John P. Whiteley, *York Hospital*, York, Pa.
M.D., Temple University School of Medicine

Louis Zinterhofer, *Monmouth Medical Center*, Long Branch, N. J.
M.D., Tulane Medical School

Psychology

Ralph Norgran, *Department of Psychology*, *Hershey Medical Center*, Hershey, Pa.
A.B., University of Pennsylvania, A.M., Ph.D. University of Michigan

Social Work

Margie Adelman, *First Step*, Harrisburg, Pa.
M.S.W., University of Pittsburgh

Molly Casey-Mock, *Hershey Medical Center*, Hershey, Pa.
M.S.W., Maryland College

Janet Dick, *Urban League of Lancaster County*, Lancaster, Pa.
M.S.W., Virginia Commonwealth University

Bruce Campbell, *Lancaster County Prison*, Lancaster, Pa.
B.A., Elizabethtown College

James Eash, *Treatment Alternatives to Street Crime*, Harrisburg, Pa.
M.S.W., Temple University

James Fuddy, *Elizabethtown Hospital and Rehabilitation Center*, Elizabethtown, Pa.
M.S.W., University of Pennsylvania

William Heffner, *Social Work Service*, *VA Hospital*, Lebanon, Pa.
M.S.W., University of Pittsburgh

Kevin Jacoby, *Elizabethtown Hospital and Rehabilitation Center*, Elizabethtown, Pa.
M.S.W., University of Maryland

William Kantor, *Social Work Service*, *VA Hospital*, Lebanon, Pa.
M.S.W., Case Western Reserve University

Rebecca Kennedy, *Holy Spirit Hospital*, Camp Hill, Pa.
M.S.W., Virginia Commonwealth University

Janice Lehr, Pennsylvania Chapter, *National Association of Social Workers*, Harrisburg, Pa.
M.S.W., West Virginia University

Pamela McDermott, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Michigan

Jill McVey, *Lancaster County Children Youth Social Services*, Lancaster, Pa.
M.S.W., Temple University

Joseph Miller, Social Work Service, *VA Hospital*, Lebanon, Pa.
M.S.W., Marywood College

Stanley Mitchell, *House Judiciary Committee*, Harrisburg, Pa.
M.S.W., Washington University: J.D., Temple University

Fiona Patterson, *Polyclinic Medical Center*, Harnsburg, Pa.
M.S.W., University of Pennsylvania

Hubert Peterson, Social Service Department, *Harrisburg Hospital*, Harrisburg, Pa.
M.S.W., University of Illinois

Gary Shuey, *Cumberland County Childrens Services*, Carlisle, Pa.
M.S.W., Marywood College

Joan Soop, *Keystone Residence, Inc.*, Harrisburg, Pa.
M.E., Shippensburg State College

Claudia Stephens, *Masonic Homes*, Elizabethtown, Pa.
B.A., Elizabethtown College

Martin Yespe, *Crisis Intervention*, Harrisburg, Pa.
M.S.W., University of Maryland

Clinical Education Centers: Occupational Therapy

Abington Memorial Hospital, Abington, Pa.

Adult Day Care, Hellam, Pa.

Allegheny General Hospital, Pittsburgh, Pa.

All Saints Hospital, Wyndmoor, Pa.

Allentown State Hospital, Allentown, Pa.

Allied Services for the Handicapped, Scranton, Pa.

Altoona Hospital, Altoona, Pa.

Ancora Psychiatric Hospital, Hammonton, N.J.

Betty Bacharach Rehabilitation Center, Pomona, N.J.

Baltimore City Hospital, Baltimore, Md.

Bergen Pines County Hospital, Paramus, N.J.

Binghamton Psychiatric Center, Binghamton, N.Y.

Bryn Mawr Rehabilitation Hospital, Malvern, Pa.

Carlisle Hospital, Carlisle, Pa. Chambersburg Hospital, Chambersburg, Pa.

Charter Fairmount Institute, Philadelphia, Pa.

Chestnut Hill Rehabilitation Hospital, Wyndmoor, Pa.

Children's Hospital of Pittsburgh, Pittsburgh, Pa.

Clifton T. Perkin's Hospital Center, Jessup, Md.

Coatesville VA Medical Center, Coatesville, Pa.

Colonial Manor, York, Pa.

Community Hospital of Lancaster, Lancaster, Pa.

Community Rehabilitation Specialists, Erie, Pa.

Crozier-Chester Medical Center, Chester, Pa.

Danbury Hospital, Danbury, Ct.

Danville State Hospital, Danville, Pa.

Deer's Head Hospital Center, Salisbury, Md.

D. T. Watson Rehabilitation Hospital, Sewickley, Pa.

Eagleville Hospital and Rehabilitation Center, Eagleville, Pa.

Eastern Pennsylvania Psychiatric Institute, Philadelphia, Pa.

Eastern State Hospital, Williamsburg, Pa.

Easton Hospital, Easton, Pa.

Elizabethtown Hospital and Rehabilitation Center of the Pennsylvania State University, Elizabethtown, Pa.

Ephrata Community Hospital, Ephrata, Pa.

Eugenia Hospital, Lafayette Hills, Pa.

Fallston General Hospital, Fallston, Md.

Fort Howard VA Medical Center, Fort Howard, Md.

Francis Scott Key Medical Center, Baltimore, Md.

Freehold Area Hospital, Freehold, N.J.

Garden State Rehabilitation Center, Toms River, N.J.

Geisinger-Wyoming Valley Medical Center, Wilkes-Barre, Pa.

Georgetown University Hospital, Washington, D.C.

Good Samaritan Hospital, Baltimore, Md. Good Samaritan Hospital, Lebanon, Pa.

Good Shepherd Home & Rehabilitation Hospital, Allentown, Pa.

Great Lakes Rehabilitation Hospital, Erie, Pa.

Hannemann University Hospital, Philadelphia, Pa.

Harrisburg Institute of Psychiatry, Harrisburg, Pa.

Harrisburg Hospital Community Mental Health Center, Harrisburg, Pa.

Harrisburg Polyclinic Medical Center, Harrisburg, Pa.

Harrisburg State Hospital, Harrisburg, Pa.

Harmarville Rehabilitation Center, Pittsburgh, Pa.

Haverford State Hospital, Haverford, Pa.

Heatherbank Rehabilitation Center, Columbia, Pa.

Hershey Medical Center, Hershey, Pa.

Highland Health Facility, Baltimore, Md. Hillside Hospital, Glen Oaks, N.Y.

Holy Spirit Hospital & Mental Health Center, Camp Hill, Pa.

Homestead Nursing and Rehabilitation Center, Willow Grove, Pa.

Hospital of the University of Pennsylvania, Philadelphia, Pa.

Howard County General Hospital, Columbia, Md.

Institute of Pennsylvania Hospital, Philadelphia, Pa.

Institute of Psychiatry & Human Behavior
University of Maryland, Baltimore, Md.

Institute of Living, Hartford, Ct.

Jefferson Hospital, Pittsburgh, Pa.

John Heinz Institute, Wilkes-Barre, Pa.

Johns Hopkins Hospital of Baltimore, Baltimore, Md.

Kessler Institute for Rehabilitation, West Orange, N.J.

Lancaster General Hospital, Lancaster, Pa.

Leading Nursing and Rehabilitation Center, Harrisburg, Pa.

Lebanon VA Medical Center, Lebanon, Pa.

Louden Memorial Hospital, Leesburg

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Reading Hospital Day Treatment Center, West Reading, Pa.

Reading Rehabilitation Hospital, Reading, Pa.

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Rehabilitation Hospital for Special Services, York, Pa.

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Saint Francis General Hospital, Pittsburgh, Pa.

Saint John's Hospital, Pittsburgh, Pa.

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Charlottesville, Va.

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Welkind Rehabilitation Hospital, Chester, N.J.

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Note: Year indicates expiration of term.

Index

A

Academic Advising 7
 Academic Dishonesty 15
 Academic Dismissal 12
 Academic Due Process 14
 Academic Good Standing 12
 Academic Honors 12
 Academic Judicial System 14
 Academic Majors 3
 Academic Minors 3
 Academic Probation 12
 Academic Program 3
 Core Program 3
 degrees offered 3
 majors offered 3
 minors offered 3
 Academic Standing 12
 Accounting 22. *See also* Business,
 Dept. of
 Adding Courses 10
 Administration 77
 Advanced placement 6
 Advising 7
 Allied Health Programs 64
 Anabaptist and Pietist Studies Mi-
 nor 66
 Anthropology 18. *See also* Sociology
 and Anthropology, Dept. of 59
 Areas of Understanding 4
 Auditing Courses 8

B

Biology, Dept. of 18
 Biology Health Professions 6
 Board of Trustees 79
 Brethren Colleges Abroad pro-
 gram 5
 Business, Dept. of 21

C

Calculation of Grades 11
 Calendar
 1990-91 Cover II
 1991-92 Cover III
 Challenge Testing 7
 Change of Major 8
 Change of minor 8
 Change of Personal Information 8
 Change of Registration 9
 Checksheets 8
 Chemistry, Dept. of 25
 Class Attendance 10

Class Standing 12
 CLEP Examinations 6
 College Assembly 17
 College Scholars 12
 Common Core 4
 Communications, Dept. of 28
 Computer Science, Dept. of 30
 Continuing Education 16
 Convocation 16
 Core Program 3
 areas of understanding 4
 common core 4
 Old Core/New Core 4
 Course Load 8
 Credit by Examination 6
 Credit Requirements 13
 Credits 11

D

Dance. *See* Fine and Performing Arts,
 Dept. of 37
 Dean's List 12
 Declaration of major 8
 Declaration of minor 8
 Degrees Offered 3
 Departmental Honors 13
 Developmental Studies 16
 Directed Study 5
 Directory 70
 Administrative Staff 79
 Board of Trustees 79
 Faculty 70
 Adjunct Faculty 74
 Assistant Professors 73
 Associate Professors 71
 Emeriti 70
 Instructors 74
 Professors 70
 the Administration 77
 Academic Affairs 77
 Business Affairs 78
 College Life 78
 Institutional Advancement 78
 Office of the President 77
 Dropping Courses 10

E

Early participation in graduation 14
 Early Warning System 12
 Earth Science. *See* Physics, Dept. of
 52
 Economics 24. *See also* Business,
 Dept. of
 Education, Dept. of 33
 Educational Philosophy and Objec-
 tives 2
 English, Dept. of 34

F

Fine and Performing Arts, Dept.
 of 37
 Forestry and Environmental Manage-
 ment 65
 French. *See* Modern Languages,
 Dept. of 46
 Full-time status 8

G

General Science Certification 65
 German. *See* Modern Languages,
 Dept. of 46
 Grade Appeals 15
 Grade Point Average 13
 Grades 11
 Graduation 13
 ceremony 13
 Credit requirements 13
 early participation 14
 Grade point average 13
 On-campus credits 13

H

History, Dept. of 42
 Honors 13

I

Incomplete Grades 11
 Independent Study 5
 Individual Program Adjustments 12
 Interdisciplinary Programs 63
 Anabaptist and Pietist Studies
 minor 66
 Biology/Allied Health 64
 Forestry and Environmental
 Management 65
 General Science Certification 65
 International Studies minor 67
 Peace and Conflict Studies mi-
 nor 67
 Pre-law 68
 Pre-medical 63
 Public Administration minor 69
 Social Studies Certification 66
 International Studies Minor 67
 Internships 6

J

Joint Institution Programs 5
 biology health professions 6
 pre-engineering 6
 pre-forestry 6

L

Leave of Absence 11
 Lecture Series 16

M

Mathematical Sciences, Dept. of 44
Mission Statement 2
Modern Languages, Dept. of 46
Music. *See* Fine and Performing Arts,
Dept. of 37

N

New Core 4

O

Occupational Therapy, Dept. of 47
Off-Campus Study 5
Old Core 4
On-Campus Credits 13
Overload Credits 8

P

Part-time status 8
Pass/No Pass Grading 11
Peace and Conflict Studies Minor 67
Philosophy, Dept. of 50
Physical Education and Health, Dept.
of 51
Physics, Dept. of 52
Placement Testing 7
Political Science, Dept. of 54
Pre-allied Health 6
Pre-engineering 6
Pre-forestry 6
Pre-Law Program 68
Pre-medical Programs 63
Preregistration 9
Program Variations and Options 5
Psychology, Dept. of 56
Public Administration Minor 69

Q

Quality Points 11

R

Rank in Class 12
Readmission 10
Registration 9
pre-registration 9
Religious Studies, Dept. of 57
Repeating Courses 8

S

Schedule Changes 9
Social Studies Certification 66
Social Work, Dept. of 61
Sociology and Anthropology, Dept.
of 59
Spanish. *See* Modern Languages,
Dept. of 46

Special Privileges 13
Special Programs 16
Student Responsibilities 7
Study Abroad 5

T

Theatre. *See* Fine and Performing
Arts, Dept. of 37
Transcripts 9
Transfer of Credits 9
Trustees 79
Tutorials 5

V

Variations to Program 5
Visual Arts. *See* Fine and Performing
Arts, Dept. of 37

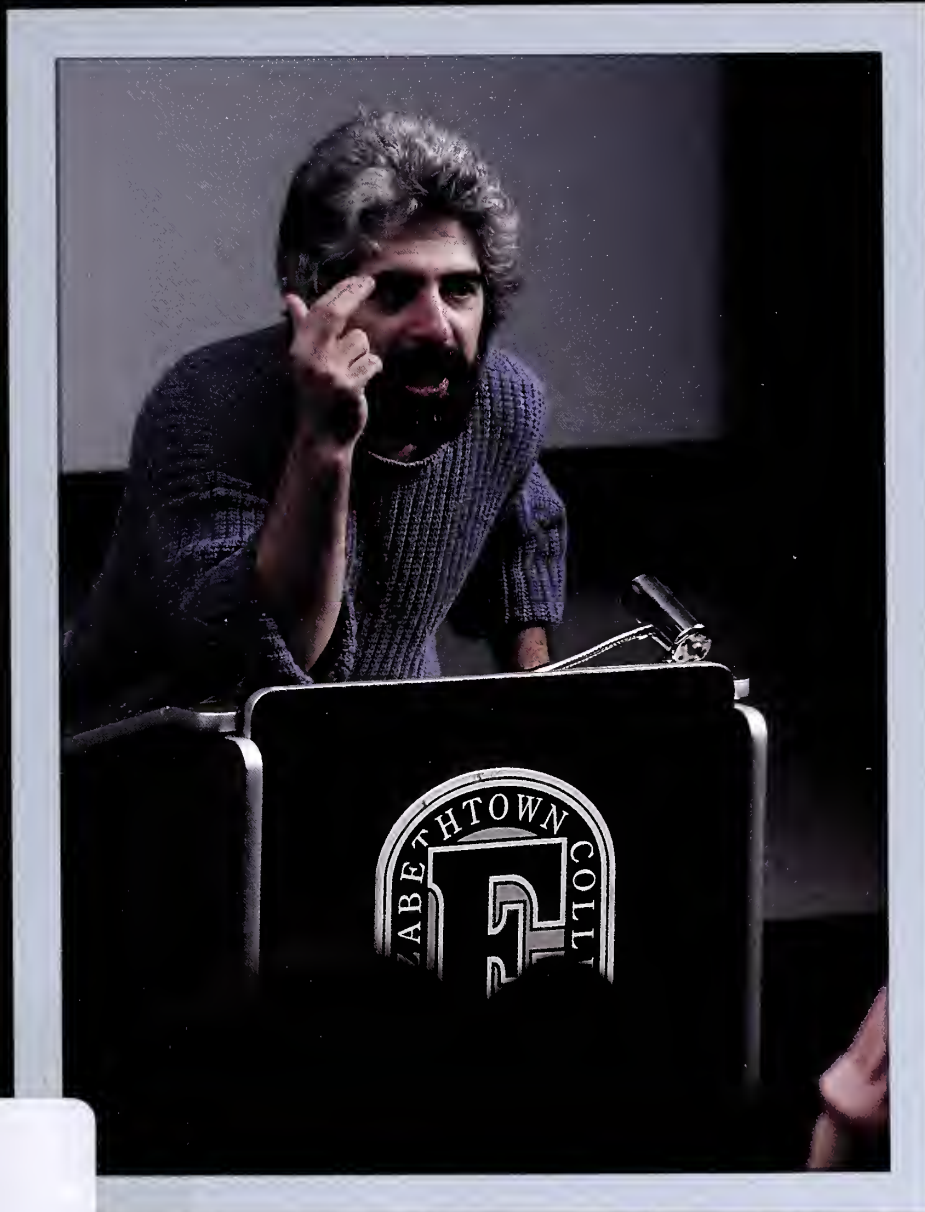
W

Withdrawal 10
from class 10
from College 10
Medical 10

Elizabethtown COLLEGE



1991-92 Academic Program



378.73
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1991-92

Calendar 1991-92

Calendar 1992-93

Fall Semester

August	19-23	Faculty Meetings and RA and PC Training
	24	Freshmen Arrive
	26	Registration Day; Evening Classes Begin, 6:30 p.m.
	27	Day Classes Begin, 8:00 a.m.
September	2	Labor Day—No Classes
	3	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	5	Homecoming
	11-14	Fall Break—No Day Classes; Evening Classes Meet
	16	Mid-term
November	27	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	28-Dec 1	Thanksgiving Recess
December	2	Classes Resume 8:00 a.m.
	10	Classes End, 5:00 p.m.
	11	Reading Day
	12-18	Final Examinations

Spring Semester

January	13-17	Faculty Meetings and In-Service Programs
	20	Registration Day
	21	Classes Begin, 8:00 a.m.
March	6	Mid-term
	7-15	Spring Break—No Classes
	16	Classes Resume, 8:00 a.m.
April	16	Easter Recess Begins at 5:00 p.m.
	17-20	Easter Recess
	20	Evening Classes Resume, 6:30 p.m.
	21	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes
May	8	Classes End, 5:00 p.m.
	11-16	Final Examinations
	23	89th Commencement

Summer Session

May 26 - July 15

Fall Semester

August	24-28	Faculty Meetings and RA and PC Training
	29	Freshmen Arrive
	31	Registration Day; Evening Classes Begin, 6:30 p.m.
September	1	Day Classes Begin, 8:00 a.m.
	7	Labor Day—No Classes
	8	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	9	Fall Break—No Classes
	17	Homecoming
	21	Mid-term
November	25	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	26-29	Thanksgiving Recess
	30	Classes Resume 8:00 a.m.
December	11	Classes End, 5:00 p.m.
	14-19	Final Examinations

Spring Semester

January	11-15	Faculty Meetings and In-Service Programs
	18	Registration Day
	19	Classes Begin, 8:00 a.m.
March	5	Mid-term
	6-14	Spring Break—No Classes
	15	Classes Resume, 8:00 a.m.
April	8	Easter Recess Begins at 5:00 p.m.
	9-12	Easter Recess
	12	Evening Classes Resume, 6:30 p.m.
	13	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes; Tuesday Evening Classes Meet
May	7	Classes End, 5:00 p.m.
	10-15	Final Examinations
	22	90th Commencement

Summer Session

May 24- July 15

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The Academic Program

378.73
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1991-92



Contents

Educational Philosophy and Objectives	2
The Academic Program	3
Course Descriptions	18
Biology	18
Business	21
Chemistry	25
Communications	28
Computer Science	30
Education	33
English	35
Fine And Performing Arts	38
(Art, Dance, Music, Theatre)	
History	43
Mathematical Sciences	45

Modern Languages	47
(French, German, Spanish)	
Occupational Therapy	48
Philosophy	51
Physical Education And Health	53
Physics	53
Political Science	56
Psychology	57
Religious Studies	59
Social Work	61
Sociology And Anthropology	62
Interdisciplinary Programs	65
Directory	72
Index	83

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Elizabethtown College:

Educational Philosophy and Objectives

The purpose of the founders of the College was to achieve "such harmonious development of the physical, mental, and moral powers of both sexes as will best fit them for the duties of life and promote their spiritual interests."

The motto of the College for years expresses this goal: "Educate for Service."

The original charter statement of purpose identified the important outcomes of education as being the development of critical and constructive habits of thought; the capacity for clear and coherent self-expression; the understanding of the natural, social and cultural world; the acquiring of a sense of personal, ethical, and spiritual values and of responsibility to the society; and the acquisition of skills and knowledge in a specialization to make the student an effective and productive member of society. In developing a statement of philosophy and objectives that both reflect our present understandings, the following represents a reasonably broad institutional consensus of the appropriate educational philosophy and goals for the years ahead to which the full College community can and should relate:

Founded by members of the Church of the Brethren in 1899, Elizabethtown College aims to develop sound intellectual judgment, keen moral sensitivity and an appreciation for beauty in the world. This educational process fosters the capacity for independent thought and commitment to personal integrity. In keeping with its historical and religious tradition, the College affirms the values of peace, justice, and human dignity, striving to achieve a distinctive blend of the liberal arts and professional studies. This union of the world of spirit and the world of work is expressed in the College motto, "Educate for Service," and on its seal, *Deus Lux et Veritas*.

The College fulfills this mission by:

- Striving to attain a diverse academic community.
- Promoting cultural pluralism and international understanding in a collegial community.
- Creating an environment that encourages the spirit of free inquiry, stimulates intellectual curiosity, and cultivates academic achievement.
- Developing the skills for critical analysis and effective communication.
- Designing programs that foster maturity, leadership, and responsible citizenship.

- Providing campus-wide support services necessary for the development of mind, body, spirit.
- Serving as a learning, resource, and cultural center for society at large.

The institutional goals for the academic program at Elizabethtown College, in outline, reflect this general statement of educational philosophy:

1. A threefold purpose in the education of students:
 - a. A general education (core) requirement, developing analytical and relational process of thought, clear and coherent means of self-expression, and a growing understanding of self and environment through distributional and integrative requirements in the liberal arts.
 - b. A specific education requirement or major, preparing the student for advanced studies and/or career opportunities by adding the different experience of specialized in-depth knowledge to the breadth of the general educational requirements.
 - c. A body of electives ensuring flexibility in each student's program that will best suit individual needs and interests, whether in general or major areas of study.
2. Response to contemporary needs for greater international understanding, by providing general education in intercultural studies and languages.
3. Provision of support in both general education and major programs for cross-disciplinary and interdisciplinary education.
4. For major disciplines of study, inclusion of opportunities in most of the liberal arts traditions of sciences, fine arts, humanities, and social sciences, and in the professional areas; while maintaining balance between professional and liberal arts programs of study for majors.
5. Provision for adult educational opportunities in a variety of traditional and non-traditional modes, integrated as far as possible with the regular educational program and faculty.
6. Fostering an environment supportive of faculty research and professional development.
7. Supporting as a part of its regular educational program quality experiential-learning programs such as clinical experiences, supervised internships, field study and other off-campus courses, and similar activities.
8. Continuing to support or to develop as appropriate, strong cooperative programs with other institutions of higher learning.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of at least 125 or 128 semester hours of credit, a grade point average of at least 2.00 in the major, a grade point average of at least 2.00 overall, and the completion of all requirements of the major and the Core Program.

The College offers four additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, the Associate of Arts, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B.S.
Business Administration, B.S.
Chemical Physics (Physics), B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Computer Engineering (Physics), B.S.
Early Childhood Education, B.S.
Economics (Business), B.A.
Elementary Education, B.S.
Engineering (Physics), B.A.
Engineering Physics (Physics), B.S.
English, B.A.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Industrial Engineering (Physics), B.S.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages (French, German or Spanish), B.A.
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.
Occupational Therapy, B.S.

Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A.
Religious Studies, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work, B.A.
Sociology, B.A.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Anabaptist and Pietist Studies (Interdisciplinary)
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Communications
Computer Science
Economics (Business)
English
Fine and Performing Arts
History
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Peace Studies (Interdisciplinary)
Philosophy
Physics
Political Science
Psychology
Public Administration (Interdisciplinary)
Religious Studies
Sociology
Statistics (Mathematics)
Visual Arts

The Core Program

Through the Core Program, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to experience a core curriculum of traditional and innovative liberal arts areas that complements both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: the Common Core, which consists of the Freshman Seminar and the Junior/

Senior Colloquium; and Areas of Understanding in which students may choose from approved Core courses in prescribed academic areas. (Approved courses are identified in the course listings.)

Alternatives to the Core Program, or deviations from it, must be approved in advance by the Academic Standing Committee and the Dean of the Faculty.

Common Core Credit Hours

Freshman Seminar 3
Entering freshmen take a Freshman Seminar during their first semester.

Junior/Senior Colloquium 3
All courses in all Areas of Understanding must be completed before students begin the colloquium.

Areas of Understanding Credit Hours

Power of Language 3
Based upon writing skill level, students are placed in either English 011 (a college composition preparatory course that does not count for Core or graduation credit), English 100, Writing and Language (a college composition course), or an advanced 100-level Power of Language course. Students placed in English 011 must eventually take English 100 for Power of Language Core credit.

Mathematical Analysis 3
Based upon analytical skill level, students are placed in either Math 011 (a college mathematics preparatory course that does not count for Core or graduation credit), or a 100-level mathematical analysis course.

Creative Expression 3
Complete three hours in Creative Expression courses.

Cultural Heritage 6
Complete six hours in Cultural Heritage courses.

Foreign Cultures and International Studies 3-4
Complete three or four hours in Foreign Cultures, International Studies, or foreign language courses. Students who use modern languages to fulfill this requirement complete either Modern Language 112, 211, or 212. Language background and placement test results determine the appropriate level of college language study (112, 211, or 212).

Natural World 7-8
Complete seven or eight hours in Natural World courses. One course must be a laboratory course.

Social World 6
Complete six hours in Social World courses.

Values and Choice 3
Complete three hours in Values and Choice courses.

Physical Well Being 3
Complete three courses in Physical Well Being, at least two courses of which must be devoted to physical activity. No more than five PWB credits may be counted for graduation credit.

Additional Requirements:

- Students must take at least four 200-level courses to complete the Core Program. Prerequisites for 200-level Core Program courses include completion of the Freshman Seminar, Mathematical Analysis, and Power of Language, and three other 100-level Core Program courses.
- In Areas of Understanding requiring two or more courses, students must take the courses in different disciplines.
- Physical Well Being courses are excluded from the above restrictions, and do not satisfy the 100-level prerequisite requirements to take 200-level Core Program courses.
- Students may count only one course in their major department for Core.
- Students may not elect to use a course to fulfill both a Core Area of Understanding, and a major requirement.
- Seniors may not enroll in 100-level Core Program courses except with the permission of the Dean of the Faculty.

Course Descriptions for Common Core

FS100* Freshman Seminar

3 credits. The Freshman Seminar provides an educational experience which is composed of several important components. First, it aims to develop intellectual skills such as critical analysis and synthesis, and communication skills such as speaking and writing. Second, it aims to broaden definitions of learning. The student is exposed to multiple ways of acquiring information and knowledge. Third, it establishes the integration of knowledge. Using the instructor's major field of study as a foundation, this course promotes connections across disciplines.

The emphasis on intellectual and communication skill development, the nature of learning and interrelationships among academic disciplines introduces students to the intellectual life of the College and lays the foundation for self-directed, independent thinking. For these reasons, the Freshman Seminar is planned to assist the student in the transition from high school to college.

JSC300* Junior/Senior Colloquium

3 credits. In the Junior/Senior Colloquium, students return to the seminar setting and explore a selected contemporary issue of national or world significance from perspectives other than those of the major. They are engaged in serious discourse with students and faculty from other disciplines, examining broader intellectual, social, and ethical concerns associated with liberal learning. This experience culminates in the writing of a major paper which integrates prior learning and the diverse studies of the undergraduate experience.

Old Core/New Core

The Core Program described above applies to students who enter the College in the fall of 1990 or subsequently. Students who entered prior to the fall of 1990 complete the General Education Core (known as "Old Core"). Specific requirements of the "Old Core" are found in the Academic

Program books of 1989-90 or earlier. (The Core Program described in this catalog is known as "New Core.")

The "Old Core" includes both Core Area Requirements in Literature, Modern Languages, Fine Arts, Religion or Philosophy, History, Social Science, Mathematics, Natural Science and Physical Education, and the College Requirement in International Education. Please refer to the 1989-90 Academic Program book for specific details.

Program Variations and Options

In addition to the majors and minors indicated above, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued, securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Registrar at the beginning of the semester during which it will be completed. Application forms for Independent Study are available in the Office of Registration and Records.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional surcharge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 18 hours as a result of the Directed Study registration are charged the current

part-time rate for tuition for those hours in excess of 18, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: Students must register for Directed Studies and Tutorials prior to beginning course work. Registration forms are available in the Office of Registration and Records.

Off-Campus Study

Study Abroad

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering two types of international experiences. The first involves study in an environment which features a foreign language. For example, students may study at Phillips-University, at Marburg/Lahn, Germany; at the University of Strasbourg, Strasbourg, France; at the University of Nancy, Nancy, France; at the University of Barcelona, Barcelona, Spain; and at the University of Azuay, Cuenca, Ecuador. The second type of experience occurs in a setting where knowledge of a second language is not a requirement. Programs of this nature exist at the Dalian Institute of Foreign Languages, Dalian, China; the Cheltenham and Gloucester College of Higher Education, Cheltenham, England; the LaVerne College of Athens, Athens, Greece; and the Hokusei Gakuen University, Sapporo, Japan. Students in the foreign language setting receive intensive language instruction prior to the opening of the university. A wide selection of courses in the social sciences and humanities is available in the BCA programs.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of German 212 and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of French 212 or Spanish 212, outstanding students who have completed French 211 or Spanish 211 will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country.

The credits earned abroad are transferred toward the degree at Elizabethtown. Students' courses are approved by the Director of Records prior to departure. Interested students should contact Dr. Sharon R. Trachte, BCA Program Coordinator, for information and should confer with their major advisor.

Joint Institution Programs

In these programs, students study at the College and at affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: pre-forestry with Duke University; pre-engineering with Pennsylvania State University; biology health professions and pre-allied health with Thomas Jefferson University.

In the **Pre-forestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Pre-engineering is a 3-2 program with Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of work in an engineering field, and receives a bachelor of science degree from Elizabethtown College and a bachelor of science degree from Pennsylvania State University. For further details, see the description in the Physics Department listing.

The **Biology Health Professions** major is a 3-2 program with Thomas Jefferson University College of Allied Health Sciences. The student spends three years at the College; after a year at Thomas Jefferson, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional upper division program results in the awarding of a bachelor of science degree from Thomas Jefferson University. For further details, consult the Biology Department listing.

In the **Pre-allied Health programs**, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Biology Department listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students' education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Fine and Performing Arts, Chemistry, Occupational Therapy, and Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the Director of Records or Department Chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- a. All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- b. Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or higher on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in progress at the time of the examination.
- c. For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Three of these credits may be applied to the Core Program requirements in Natural World.
- d. For the examinations in Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the Core Program.
- e. For the English Composition and Mathematics Examinations, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the Core Program.

2. *Subject Examinations*

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty. There are two types of Challenge Tests: Tests for Academic Credit and Tests for Placement and/or Waiver.

Tests for Academic Credit are *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option.

Tests for Placement and/or Waiver comprise tests such as those given for placement in modern languages or mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Challenge Tests given at the initiative of the College are administered without fee to the student.

There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a Test for Academic Credit is \$50; the fee for a Test for Placement and/or Waiver is \$30. In addition, appropriate tuition is charged for academic credit awarded as a result of Challenge Tests; the charge is 50% of the appropriate part-time tuition rate in effect at the time the test is administered.

Placement Testing

During the summer orientation program all new students take a mathematics placement test. In addition, all students with at least one year of high school language must take the appropriate modern language placement test. The languages tested are French, German and Spanish. If students have studied more than one of these languages, they take the placement test in the language in which they have had the most intensive study or the language in which they wish to pursue further study at the college level.

Students who wish to use modern language to fulfill the Foreign Cultures and International Studies Area of Understanding in the Core Program complete either Modern Language 112 or 211 or 212. Language background and placement test results determine the appropriate level of college language study (112, 211 or 212). Students who demonstrate competence at the 111 level enroll in 112. Students who demonstrate competence at

the 112 level enroll in 211. If competence is demonstrated at the 211 level, the appropriate course is 212.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the Core Program, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Academic Advising

Each student who is enrolled in a degree program is required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors, and minors. (Certain non-degree students are also assigned advisors.)

Freshman Advising Program. The Freshman Advising Program is designed to touch on all aspects of the freshman experience. The goal is to assist freshmen in realizing the maximum educational benefits available to them by helping them to better understand themselves and to learn to use the resources of the College to meet their special educational needs and aspirations. Course selection is included but is not the primary task to be accomplished.

Upperclassman Advising. Upperclassmen who have declared a major are assigned an academic advisor from their major department. Upperclassmen who have not yet declared a major are assigned an advisor from the Personal and Career Counseling Service.

All advisors work closely with students during the preregistration period for course selection for the coming semester. Consultation with the advisor also occurs during the schedule change period and the drop-add period at the beginning of each semester. Departmental advisors also provide assistance in regard to graduate or professional school and/or career planning.

Student Responsibilities

Students are required to consult with their major advisors as to course selection, course sequences, graduation requirements, etc. (Consultation with the second major or minor advisor is an expectation but not a requirement.) Preregistration Course Request Sheets, Request for Schedule Change forms, and Drop and Add forms require the major advisor's signature, as do certain other forms and documents from the Office of Registration and Records.

The advisor's signature on various documents indicates

that the student has consulted with the advisor; *however, it is the student's responsibility to ensure that all graduation requirements have been met and that other requirements, regulations, or deadlines have been observed.*

Checksheets for academic majors and minors are available in the Office of Registration and Records. These are helpful in noting the completion of program requirements. In addition, courses included in the major or minor GPA are noted.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors and minors. Students are expected to consult with these advisors in regard to course selection, course sequence, and graduation requirements.

Declarations and changes of majors and minors are facilitated in the Personal and Career Counseling Service. When a change of major or minor occurs, records are transferred from one department to another; however, the student must initiate the change.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported in writing to the Office of Registration and Records immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Full-time/Part time Status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking fewer than 12 hours per semester pays the regular semester hour rate plus applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credit hours per semester to be eligible for intercollegiate athletic competition.

Course Load

Since the completion of at least 125 or 128 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of approximately 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

Approval by the Associate Dean of the Faculty is required for all overload credit hours. An additional fee is charged for each semester hour above 18 for which a student is enrolled in a given semester. Students who wish to petition for an overload should obtain the appropriate form in the Office of Registration and Records.

A student completing the "Old Core" program may carry up to 18 semester hours of work in any given semester except the summer session when the maximum is nine semester hours for the seven-week period. Such a student who has achieved a cumulative grade point average of 3.0 or above may petition to carry up to 20 semester hours of credit in a semester, or 10 semester hours of credit in the summer session. Approval of the Associate Dean is also required.

Students completing the "New Core" program may carry up to 17 semester hours of work in a semester or nine semester hours in a seven-week summer session. Such students desiring to take credits in excess of these limits must have achieved a cumulative grade point average of 2.7 and have the approval of the Associate Dean. The maximum credit load for these students is 19 semester hours in a semester or 10 semester hours of credit in a seven-week summer session.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Office of Registration and Records. Failure to do so will result in a duplication of hours carried, a possible delay in graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated are as follows:

1. A student may repeat any course in which the student receives an *F* or *NP*.
2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's advisor and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a course that is *prerequisite to a Core Program requirement*. The student must repeat the course in which the *D* grade was received within one year of the original enrollment in the class (or the next semester in which the course is offered if the course is offered less frequently than once a year).
3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt

regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit are determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Office of Registration and Records. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior* to enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the Director of Records. Students must request that the Registrar's Office of the transferring institution send an official transcript to the Office of Registration and Records at Elizabethtown College. Facsimile (fax) copies and student delivered transcripts cannot be accepted.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Office of Registration and Records, in person or by mail, at least one week prior to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/professional schools or for employment. Two copies of the final record are also available free to each

student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Office of Registration and Records at least one week prior to the date needed. Federal law requires that all requests must be made **in writing by the student**. Neither telephone requests nor facsimile (fax) requests can be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Office of Registration and Records; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.
2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Elizabethtown College does not send or accept facsimile (fax) copies of transcripts.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a non-degree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is no guarantee that a student will be registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit for the next semester. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the advisor. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of The Center for Continuing Education for details about registration.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Office of Registration and Records.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds must be approved by the academic advisor and completed through the Office of Registration and Records. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; the course drop is not complete until this is done.

Class Absences and Withdrawal Policy

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor or the College may dismiss a student from a course for excessive absences. Such dismissals in weeks 1-4 of the semester

result in removal of the course from the student's record; after the fourth week, a grade of W/F is recorded for the course. A student may appeal for reinstatement to the Academic Standing Committee.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Long-Term Absences

Long-term absences from all courses/campus may result in mandatory withdrawal from the College. After 15 consecutive class days of absence from all classes, a student is considered to have withdrawn from the College. (Students absent for verified medical reasons will be granted a Medical Withdrawal (see below).)

Withdrawal

Withdrawal from Classes

Students withdraw from classes through the Office of Registration and Records. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or W/F. All withdrawals after the end of the eleventh week of the semester receive grades of W/F unless the withdrawal is from College and is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of W/F is calculated into the student's average as though it were an F.

Withdrawal from College

Students who withdraw from the College during a semester also withdraw from all of their classes for that semester. Full-time students withdraw from the College through the Personal and Career Counseling Service; part-time students withdraw through the Office of Registration and Records. Students who withdraw during the semester are expected to leave the campus as of the effective date of their withdrawal.

For purposes of billing, room reservation, academic responsibility, etc., the effective date of withdrawal is the date on which the completed official notice is returned to the Personal and Career Counseling Service or the Office of Registration and Records. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical Withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstances. Medical Withdrawal assumes an incapacity that prohibits acceptable academic performance, not simply a hardship

or inconvenience. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Medical Withdrawal is withdrawal from the College and, therefore, from all courses. A student does not selectively withdraw from individual courses under the rubric of "medical withdrawal."

Readmission

Students who leave the College in academic good standing (minimum 2.0 cumulative grade point average) must contact the Admissions Office for readmission. Students who leave the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission (see page 12).

Leave of Absence

A student may take a leave of absence from the College to study abroad in the BCA program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Any administrative fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$100 deposit must be returned to the Office of Registration and Records by May 1 or December 1 to ensure a place in the College and in courses.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor

F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	Non-Pass (failure)
AUD	Audit

Quality Points

A 4 point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester Hour of Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Grade Point Average Calculation

The grade point average is dependent upon the credit hours attempted and the quality points accumulated. To determine the grade point average for a semester, multiply the credit hours for each course by the quality points for the grade earned in the course, sum the quality points for the semester, and divide the total quality points by the total credits attempted for the semester. Courses in which a grade F or WF is received are included in the calculation. Courses in which a grade of W is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester GPA. For the major GPA, use all courses in the major department and all courses required for the major. For the minor GPA, use all courses in the minor department and all courses required for the minor.

Incomplete Grades

A grade of "I" may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of "I" are assigned for extenuating circumstances only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the "I" in cases of suspected academic dishonesty.

All grades of "I" received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of "F".

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their Physical Well Being courses on a pass/no pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).
2. The cumulative average must be 2.75 or higher.
3. The selected course may carry no more than four semester hours of credit and **must be a free elective**. It must be outside the major or minor department, may not satisfy a Core Program requirement, and may not be a course required by the major or minor.
4. No more than four courses in total (excluding Physical Well Being) may be taken under this grading option.

Pass/No Pass registration forms are available in the Office of Registration and Records. Once a course is registered under the Pass/ No Pass option, it may not be changed. Grades of D- or higher are recorded as Pass; grades of F are recorded as No-Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying D or F grades in 100 or 200-level courses at the end of the fifth week of the semester are notified of their deficient performance. Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits, a junior; with 90 credits, a senior.

Rank in Class

The student's rank in class at graduation is based on the credits, grades, and quality points earned at Elizabethtown College.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

<i>Semester hours Attempted</i>	<i>with</i>	<i>Cumulative Grade Point Average below:</i>
1 - 18		1.70
19 - 36		1.80
37 - 54		1.90
55 - 72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses or seven semester hours.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is experiencing academic difficulty. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence from the College of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the Registrar.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the Provost, who will direct warranted appeals to the Academic Standing Committee.

Academic Honors

Dean's List

A full-time student who earns a semester grade point average of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

A College Scholar is a currently enrolled student who, having completed at least 60 credit hours at the College, has achieved a cumulative grade point average of 3.75 or higher. Scholars are identified at the end of the spring term, and are publically recognized at the Convocation at the beginning of the following academic year. They are awarded a certificate and their status as College Scholar is recorded on their permanent record.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative grade point average of 3.50 is graduated *cum laude*; an average of 3.75, *magna cum laude*; an average of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria include, but are not limited to, the following: the student must have a minimum G.P.A. of 3.5 in the major/minor and overall cumulative G.P.A.; possess outstanding abilities in areas such as research projects or papers, etc., and have pursued academically rigorous courses in the discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's Honor List during the preceding semester may, with the permission of the instructor, attend any class in the College on a

space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis without registration or credit.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. In addition, students who are close to completion of graduation requirements may petition for permission to participate in the May graduation ceremonies. In order to participate as "an early participant," the student *must have a 2.0 cumulative grade point average in the major and be in academic good standing (2.0 overall g.p.a.) at the time of the commencement ceremony*. In addition, the student must be close to completion of all graduation requirements. "Close to completion" normally means "not in excess of six credit hours of course work." Under no circumstances will approval be given for needing more than ten credit hours of course work. *No exceptions can be made to these standards*. Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work will participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed on the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit internship.

Credit Requirements

To receive a Bachelor of Arts or Bachelor of Science degree from Elizabethtown College, the student must earn a minimum of 125 or 128 semester hours of credit. (MA 011, EN 011, ESL 175 and ESL 176 are not counted toward this credit hour graduation requirement.) Students who enter the College in the fall of 1990, or subsequently, are required to complete at least 125 semester hours of credit, including the Core Program (New Core). Students who entered prior to the fall of 1990 must complete the at least 128 semester hours of credit, including the General Education Core (Old Core). In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the

course outline (see departmental listings for specific information).

Program Requirements

Students are required to complete successfully all requirements of the major and all of the Core Program requirements. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a grade point average of at least 2.00, with a minimum average of 2.00 in a major (and a 2.00 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have an average of at least 2.00 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in the major, at least eight of which are at the upper level (normally 300 and 400 level), and 2) at least 30 of the last 60 credits.

Note: Credits earned at the University Center in Harrisburg or in the BCA program while the student is matriculated at the College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the catalog dated four years prior to graduation, or, for major requirements, by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or, for major requirements, the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine requirements for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the Registrar by February 15.

Early Participation

Petitions for early participation in the May graduation ceremony must be presented in writing to the Registrar by February 15 and must include the reason(s) for the

request and supporting rationale. The Registrar, in consultation with the Provost, will decide each case on its individual merit. *Approval is not automatic.* Early participants are identified by a special notation in the Commencement program.

In order to participate as "an early participant," the student *must have a 2.0 cumulative grade point average in the major and be in academic good standing (2.0 overall g.p.a.) at the time of the commencement ceremony.* In addition, the student must be close to completion of all graduation requirements. "Close to completion" normally means "not in excess of six credit hours of course work." Under no circumstances will approval be given for needing more than ten credit hours of course work. *No exceptions can be made to these standards.* Diplomas are distributed to early participants at the next appropriate graduation date following actual completion of all work required for graduation. The student must contact the Office of Registration and Records to request the diploma, indicating the address to which the diploma is to be sent.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature are assumed by the Academic Standing Committee and the Academic Review Board.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Personal and Career Counseling Service, who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Board is comprised of three faculty members, two students, and one administrator appointed by the president. The provost serves as convener of the board but he is not a member and does not vote in decisions made by the board. The board handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard to Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments.

With Regard to Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.
2. To request a hearing before the Academic Review Board when found by a faculty member to be in violation of the standards of academic integrity and to receive a written statement from that board summarizing the findings of the board and its disposition of the matter.
3. To request a hearing before the Academic Standing Committee when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.
4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably in academic matters and will conduct themselves accordingly. Students entering in fall 1991 or subsequent semesters are asked to adhere to the Code of Integrity adopted by both the Student Senate and the Faculty Assembly.

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of course assignments as well.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information for an assignment when such information is not appropriate for the assignment. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of F in the course and possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.
2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have a faculty member, another student, or a member of the Personal and Career Counseling Service present as an observer.
3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A copy of this notification is sent to the Office of the Provost. Should the department chair not be in agreement with the faculty member, and the matter not be resolved at the department level, both the faculty member and the department chair will give written notification, with rationale, to the Provost. The Provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.
4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Board. The request for a hearing must be presented in writing to the provost within five days of receipt of the notice of information.
5. The provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is the provost's judgment that academic dismissal is appropriate, he will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.
6. The student will have the option of accepting the provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the Academic Standing Committee within five days of receipt of the provost's decision.

Grade Appeals

Questions concerning grades should be called to the attention of the professor immediately after the official grade report is received from the Office of Registration and Records.

Procedures For Grade Appeals

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.

2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal. A request for the meeting must be submitted within thirty days of the date on which the grades are formally issued from the Office of Registration and Records.

3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision. Should the faculty member and the department chair not be in agreement, and the matter not be resolved at the department level, both the faculty member and the department chair will give written statements to the Provost explaining the reasons for upholding or altering the grade. The Provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.

4. The student will have the alternative, within ten days of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the provost.

5. The provost will review the detail of the appeal. The Academic Review Board will hear warranted appeals as determined by the provost.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the University Center, 2986 N. Second St., Harrisburg, PA 17110.

In addition to these traditional learning options, the College offers an external degree program in which adults

work with faculty advisors to develop individualized study plans leading to Associate, Bachelor of Professional Studies, or Bachelor of Liberal Studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to meet the external degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September, 1990, the speaker was Carlos Fuentes, the noted Mexican writer, statesman and scholar.

Lecture Series

Three lectures are sponsored at Elizabethtown College through which national and international leaders speak on political, ethical, social, and economic topics of major importance.

The lectures are:

The Frank S. Carper Lecture on Ethics, Business and the Professions is an endowed lectureship named in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in honor of the late John F. Chubb of the Class of 1961 who was a trustee of Elizabethtown College, and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown.

The President's Lecture is a forum for a person of national or international reputation to speak on a contemporary issue.

College Assembly

The College Assembly is a dedicated period on Wednesday morning at 10:00 a.m. throughout the academic year. The Assembly consists of a series of diverse programs designed to enhance cultural awareness and to provide a forum for discussion of issues of common concern to the College Community.



Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text; the reader is referred to the appropriate department.

Accounting

See Department of Business, page 21.

Anthropology

See Department of Sociology and Anthropology, page 62.

Department of Biology

Professors Dively, Heckman, Hoffman
Associate Professors Laughlin (*Chair*), Polanowski
Assistant Professor McCormick

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The curriculum, leading to a Bachelor of Science degree in Biology, prepares students for the rigors of graduate school and professional schools of medicine, and for biologically-oriented employment opportunities.

The department involves students in research studies with professors through senior seminars and independent study projects.

The Department of Biology offers a choice of four majors leading to a bachelor of science degree. In addition, the department offers a biology minor and two programs leading to receipt of a degree from cooperating institutions.

The Bachelor of Science: Biology Major prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 411, 412, and 12 additional hours in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; Mathematics 117 or 121, and 151; and a foreign language through the 112 level or one Computer Science course selected from 115, 120, or 121.

The Bachelor of Science: Biology Major/Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Biology Major/Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University. The specific requirements are Biology 111, 112, 201, 202, 202L, and eight additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 117 or 121 and 151; and Computer Science 120. In addition, nursing students must take Communications 301 and Physical Therapy students must take English 285B and a business elective. In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University (three years for Physical Therapy) in Philadelphia. After completing sufficient credits at Thomas Jefferson University, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, 411, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Biology Secondary Education prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the biology major (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, and one course selected from 321 or 324-324L, and two additional courses in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; one course in Earth Science; Mathematics 117 or 121, and 151;

Psychology 105; Education 205, 230, 305, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

The Bachelor of Science: General Science Secondary Education Major enables the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Dr. Hoffman.

The Biology Minor provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 and 112 or 105-105L and 106-106L or 105-105L and 108-108L or 106-106L and 108-108L; 212 or 215-215L; one course from 201, 222, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 19 or 20, depending on whether Biology 212 is taken. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Hoffman of the Biology Department will work with the student and the student's major advisor.

The Biology Preforestry Program offers a biology concentration in the five year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Biology Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University for the junior and senior years.* The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs.

*Physical Therapy requires two years at Elizabethtown College and three years at Thomas Jefferson University.

105* Principles of Biology

3 credits. **(The Natural World and Old Core)** Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *Corequisite: (to satisfy New Core lab requirement) Biology 105L. May not be taken for credit after completing Biology 111.* Staff.

105L* Principles of Biology Laboratory

1 credit. **(The Natural World and Old Core)** Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106* Genetics, Evolution, and Man

3 credits. **(The Natural World and Old Core)** Designed for the non-biology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. *Corequisite: (to satisfy Old Core) Biology 106L.* Spring semester. Staff.

106L* Genetics, Evolution, and Man Laboratory

1 credit. **(The Natural World and Old Core)** A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106* Spring semester. Staff.

108* Man and His Environment

3 credits. **(The Natural World and Old Core)** Designed for the non-biology major. Discussion of basic principles of environmental interrelationships and a consideration of specific problem areas such as pollution, radiation, and population growth with regard to those principles. *Corequisite: (to satisfy Old Core) Biology 108L.* Prof. Laughlin.

108L* Man and His Environment Laboratory

1 credit. **(The Natural World and Old Core)** Includes field trips to water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Prerequisite or corequisite: Biology 108.* Prof. Laughlin.

111* Introduction to Biological Sciences

4 credits. **(The Natural World and Old Core)** The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses beyond Biology 112. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit without the permission of instructor after completing Biology 105.* Staff.

112 General Biology

4 credits. **(Old Core)** The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology 111.* Spring semester. Staff.

201 Human Anatomy

4 credits. **(Old Core)** A study of human structure at the tissue, organ, and system levels. Particular attention is given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology 111, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. **(Old Core)** A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology 111, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. **(Old Core)** A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

212 Molecular Biology

3 credits. (Old Core) An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor*. Spring semester. Prof. Polanowski.

215 Genetics

3 credits. (Old Core) A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor*. Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit. (Old Core) Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215*. Fall semester. Prof. Heckman.

222 Immunology

3 credits. (Old Core) A basic course encompassing immunity, serology, immunochemistry and immunobiology. Considered are antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology 112 or permission of instructor*. Spring, alternate years. Prof. Polanowski

235 General Microbiology

4 credits. (Old Core) A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 105 or 114, or permission of instructor*. Spring semester. Prof. McCormick.

311 Biological Instrumentation and Research Methodology

4 credits. (Old Core) A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry*. Fall semester. Prof. McCormick.

313 General Ecology

3 credits. (Old Core) The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor*. Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. (Old Core) Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313*. Fall semester. Prof. Laughlin.

321 Plant Physiology

4 credits. (Old Core) A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 105 or 114; or permission of instructor*. Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. (Old Core) A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor*. Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. (Old Core) An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324*. Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. (Old Core) A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112*. Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. (Old Core) Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112*. Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. (Old Core) A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112*. Fall semester. Prof. Dively.

342 Development and Evolution

3 credits (Old Core) A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215, 215L*. Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. (Old Core) A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112*. Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. (Old Core) A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of the instructor*. Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. (Old Core) A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114*. Offered on demand. Staff.

370-379 Special Topics in Biology

Variable credit. (Old Core) Courses of a specialized nature reflecting the interests of the student and the instructor. Courses offered on a random basis. Staff.

411-412 Seminar in Biology

0 and 2 credits, respectively. (Old Core) An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311*. Staff.

480-489 Independent Study

Variable credit. (Old Core) Designed to allow the student to do independent research in some phase of biology. *Prerequisites: 16 credits in biology, permission of the instructor and Department Chair*. Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *corequisite:* Education 308. Fall, alternate years. Prof. Hoffman.

Department of Business

Professors Buffenmyer, Fazzi, C. Kreider
Associate Professors Evans, Gliptis, Hoppie, Meoli, Neyer, Pomroy, Stone (*Chair*), Trostle
Assistant Professors Beyerlein, S. Dolan (*Associate Chair*), Hill, Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations. The department's goal is to offer students a broad understanding of the nature of business and its role in society, and to provide the foundation for graduate study, continuing self-education, and personal development.

The Department of Business offers three majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the Core Program, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrating in one or more of six areas: *accounting, computer science/business information systems, economics, finance, management, or marketing.* A student may also select a secondary area of concentration in *communications or international business.*

Business administration students may also major in forestry and environmental management. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Arts in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. In consultation with the department advisor, the elective courses should be tailored to the student's area of interest.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 101, BA 265, BA 330, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Accounting

A major in accounting includes Accounting 105, 106 (Ac 107-108 may be substituted), 205, 206, 305, 306, 12 additional semester hours in accounting: Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151.

Business Administration

A major in business administration includes Accounting 107, 108, (Ac 105-106 may be substituted); Business Administration 215, 248, 265, 325, 330, 355; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration.

For an *Accounting Concentration*, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A *Computer Science/Business Information Systems Concentration* requires Computer Science 121, 135, 335, 340. An *Economics Concentration* requires Economics 301, 302, and two other economics courses. A *Finance Concentration* requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The *Management Concentration* requires Business

Administration 369, 499, and two other management courses from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 311, 498, and two other marketing courses from the departmental advising sheet.

A *Secondary Concentration in International Business* requires competency in a modern language at the 112 level, Anthropology 211, Political Science 205, Economics 307, and two other courses from the departmental advising sheet. A *Secondary Concentration in Communications* requires Communications 105, English 185, and three other courses from the departmental advising sheet.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics: Computer Science 120, Mathematics 121, 151, and 252; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may not enroll in Accounting 107 or 108 unless the faculty specifically allows them to do so. Likewise, students who complete 107 may not enroll in 105 or 106. The proper course sequence is either 105-106, or 107-108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite:* Accounting 105. Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite:* Accounting 107. Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite:* Accounting 106 or permission of the instructor. Fall semester. Profs. Fazzi, Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite:* Accounting 205. Spring semester. Profs. Fazzi, Neyer.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites:* Accounting 301, 206 or permission of the instructor. Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite:* Accounting 106 or 108; or permission of the instructor. Fall semester. Profs. Beyerlein, Fazzi.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite:* Accounting 305. Spring semester. Profs. Beyerlein, Fazzi.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite:* Accounting 106 or 108. Spring semester. Prof. Neyer.

370-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite:* Accounting 206. Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite:* Accounting 206. Fall semester. Prof. Pomroy.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites:* Accounting 302, 405, 406; or permission of the instructor. Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite:* approval of the department chair. Prof. Fazzi.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites:* approval of the department chair and the Provost.

499 Seminar in Accounting

3 credits. A study of selected topics currently under discussion in the accounting field. A major research project is required. Offered upon student demand and faculty availability. *Prerequisite:* permission of the instructor. Spring semester.

Business Administration

111 Document Processing I

3 credits. A brief introduction to keyboarding with a greater emphasis upon formatting techniques utilizing the microcomputer and a word processing software application. Prof. C. Kreider.

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. *Prerequisite: or corequisite: Economics 102.* Prof. Hill.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business; includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisites: Mathematics 151, 117.* Profs. Beyerlein, Stone, Trostle.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites: Business Administration 215 Mathematics 151.* Fall semester. Prof. Hill.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisite: Business Administration 215 or permission of the instructor.* Spring semester. Prof. Meoli.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites: Business Administration 215, 265.* Fall semester. Prof. Meoli.

316 Marketing Management

3 credits. The formulation of marketing policies and the planning techniques for embodying these policies in marketing programs. Case analysis is stressed. *Prerequisites: Business Administration 215, 248, 265.* Spring semester. Prof. Hill.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite: Business Administration 215.* Fall semester. Prof. Buffenmyer.

319 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during, and after a purchase. Emphasis is on understanding and predicting the individuals consumption patterns so that effective marketing strategies can be developed. *Prerequisites: Business Administration 215.* Fall semester. Prof. Meoli.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite: Accounting 106 or 108.* Profs. Beyerlein, Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of the instructor.* Spring semester. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Prof. C. Kreider.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites: Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

370-379 Special Topics

3 credits. Topics and problems of current relevance in business.

371 International Business Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite: Business Administration 265.* Prof. Buffenmyer.

376 Decision Making for the Public Sector

3 credits. A study of the various quantitative tools which will aid persons in public administration to quantify public policy concerns. Modeling techniques to be covered include cost-benefit analysis, forecasting, pricing, cost effectiveness analysis. Examples of the public concerns to be covered are the quality of public hospital services, public education services, and public health programs. *Prerequisites: Mathematics 151, and/or Business Administration 248.* Prof. Beyerlein.

378 Purchasing Management

3 credits. A basic overview of the purchasing function. Topics covered include organization of purchasing, policies and procedures, sourcing, negotiations, make or buy, legal considerations, quality control, procurement of capital equipment, impact of computerization, and vendor evaluation. *Prerequisites: Business Administration 248, 331, 377; Computer Science 120; or permission of the instructor.* Offered on demand. Staff.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite: Business Administration 325.* Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite: Business Administration 325.* Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites: Business Administration 248, 369; Economics 102.* Spring semester. Prof. Stone.

467 Personnel Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite: Business Administration 265.* Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite: Business Administration 369 or permission of the instructor.* Fall semester. Prof. Muston.

469 International Comparative Management

3 credits. A state of the art study of cross-cultural or cross-national similarities and differences of management phenomena as they reflect upon United States managers. Extensive use of primary literature sources and critical analysis of these sources will be required. *Prerequisite: Business Administration 265.* Prof. Stone.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite: approval of department chair.* Prof. Buffenmyer.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites: approval of the department chair and the Provost.*

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisites: senior status and permission of the instructor.* Prof. Muston.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites: Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor.* Spring semester. Prof. Hill.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites: Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor.* Profs. Buffenmyer, Muston.

Economics

101 Principles of Economics I

3 credits. **(Old Core)** The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. Does not fulfill Core requirement for students majoring in the business department. Profs. Evans, Hoppie, Trostle.

102 Principles of Economics II

3 credits. **(Old Core)** Topics include elasticity, consumer behavior, production costs, market structures (competition oligopoly, monopoly), and resource pricing. Does not fulfill Core requirement for students majoring in the business department. Profs. Evans, Hoppie.

301 Intermediate Microeconomic Theory

3 credits. **(Old Core)** An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites: Economics 101, 102; Mathematics 117 or 121.* Fall semester, even-numbered years. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. **(Old Core)** Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites: Economics 101, 102; Mathematics 117 or 121.* Spring semester, even-numbered years. Prof. Hoppie.

303 Money and Banking

3 credits. **(Old Core)** A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisite: Economics 101, or permission of the instructor.* Spring semester. Prof. Evans.

304 Public Finance

3 credits. **(Old Core)** An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisite: Economics 102.* Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. **(Old Core)** The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Offered on demand. Prof. Hoppie.

307 International Economics

3 credits. **(Old Core)** The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite: Economics 101 or permission of instructor.* Offered on demand. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. **(Old Core)** Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite: Economics 101 or permission of the instructor.* Offered on demand. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. **(Old Core)** An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites: Economics 101, 102; Mathematics 117 or 121.* Offered on demand. Prof. Evans.

370-379 Special Topics

3 credits. **(Old Core)** Topics and problems of current relevance in economics.

372 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Prof. Hoppie.

480-489 Independent Study

Variable credit. (Old Core) Independent study and research on a problem or topic in the field of economics. *Prerequisites:* approval of the department chair and the Provost.

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite:* permission of the instructor. Fall semester. Odd numbered years. Prof. Gliptis.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology Program*), Ranck, Schaeffer (*Chair*), Spangler

Associate Professor Reeder

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their Core Program requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations, and minors in chemistry and biochemistry.

The bachelor of Science in biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education.

Premedical and other health professions programs are discussed on p. 63.

The bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum, the medical technology curriculum, and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, N. J.), York Hospital, Lancaster General Hospital, Abington Hospital and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the degree is granted. It is the student's responsibility to keep the Registrar's office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with the Registrar in January of the year of the clinical work.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's advisor and the department chair. Students planning much work in chemistry should consult with a departmental advisor as early as possible to plan the sequence of courses in chemistry, mathematics, physics, biology, and modern foreign language which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary

education also requires early planning to ensure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-362, 461-462, 490 or 496 or 451, 491 or 497; Biology 111, 112, 324, 324L; 9 semester hours of additional biology and/or chemistry, 6 of which must be in biology; Computer Science 115; Mathematics 122; Physics 102; and Modern Language*.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 346, 343, 344, 352, 361-2, 402, 421, 461-2, 451 or 490 or 496, 491 or 497; Computer Science 115; Mathematics 222; Physics 102; and Modern Language*

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; Biology 111, 112, 222, and 235, and electives to total a minimum of 16 semester hours; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus Core Program and electives must total 100 semester hours. The clinical year includes a minimum of 28 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, 490 or 496 or 451, 491 or 497; Mathematics 122; Physics 102; two additional courses in biology or chemistry; Modern Language*

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Psychology 105; and Education 205, 230, 305, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see page 67.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102; Modern Language*; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 346, 352, 361-2, 461-2, 490 or 496 or 451; Computer Science 115; Mathematics 222; Physics 202; Modern Language*; and a minimum of three courses from the following: Chemistry 402, 421, 491 or 497; Mathematics 362; or any 300-400 level Physics courses.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of advanced chemistry as approved by the department faculty.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

*A modern language is defined as one taught by the Department of Modern Languages at Elizabethtown College or specifically approved by the Department of Chemistry. A chemistry or biochemistry student may fulfill the Department language requirement in any one of the following ways:

- 1) Proving competence in a modern language at the 112 level by examination.
 - 2) Satisfactory completion of a 112-level modern language course.
 - 3) Satisfactory study of a second modern language, not previously studied by the student, as determined for each individual by the department faculty.
-

101* General Chemistry: Practical Principles

4 credits. **(The Natural World and Old Core)** An introduction to the study of the material world from a phenomenological, measurable, and observable viewpoint. Topics include elements and compounds, weight relationships, states of matter, solutions, descriptive reactivity, reaction energetics, solution equilibria, and organic and biochemical structure and nomenclature. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra.* Fall, spring semesters. Profs. Reeder, Schaeffer.

105* General Chemistry: Theoretical Principles

4 credits. **(The Natural World and Old Core)** An introduction to the study of the material world from a conceptual, model building viewpoint. Topics include atomic composition and electronic structure, bonding and molecular structure, physical properties, thermodynamics, and reaction kinetics. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra.* Spring semester. Prof. Schaeffer.

113* Organic Chemistry I

4 credits. **(The Natural World and Old Core)** The first course for those students who plan to take more than one year of chemistry. Topics include formulas, stoichiometry, bonding, geometry, equilibrium, kinetics, and instrumentation applied to carbon compounds. The importance of organic compounds across disciplines and in everyday life will be emphasized. Hours: lecture 2, discussion 1, laboratory 3. *Prerequisites: high school chemistry and algebra or equivalent.* Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. **(Old Core)** A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite: Chemistry 113.* Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or corequisite: Chemistry 114; permission of instructor.* Spring semester. Prof. Proctor.

213 Analytical Chemistry I

4 credits. **(Old Core)** Quantitative analysis emphasizing classical inorganic, gravimetric, and volumetric methods. Hours: lecture 2, laboratory 6. *Prerequisite: Chemistry 114 or equivalent.* Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. **(Old Core)** A continuation of Chemistry 213, with added emphasis on instrumental methods and computer applications. Hours: lecture 3, laboratory 6. *Prerequisite: Chemistry 213 or equivalent.* Spring semester. Prof. Hedrick.

242 Chemical Equilibrium and Kinetics

3 credits. **(Old Core)** Thermodynamics as applied to chemical equilibria in ideal and nonideal, homogeneous, and heterogeneous systems. Kinetics, ionic solutions, and electrochemistry are also treated. *Prerequisites or corequisites:* Chemistry 214, Mathematics 122, Physics 102. Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. **(Old Core)** The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites:* Chemistry 213 and Biology 112 or equivalent. Fall semester. Prof. Spangler.

324 Biochemistry II

3 credits. **(Old Core)** A continuation of Chemistry 323. *Prerequisite:* Chemistry 323. Spring semester. Prof. Spangler.

326 Techniques of Biochemistry I

1 credit. **(Old Core)** Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite:* Chemistry 323. Fall semester. Prof. Spangler.

327 Techniques of Biochemistry II

1 credit. **(Old Core)** A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite:* Chemistry 326; *corequisite:* Chemistry 324. Spring semester. Prof. Spangler.

343 Atomic Structure (Physics 221)

3 credits. **(Old Core)** Twentieth-century developments in the structure of the atom. Topics include X-rays, radioactivity, atomic spectra, blackbody radiation, introduction to quantum theory emphasizing the extranuclear structure of the atom, elementary particles, nuclear structure, and transformations. This course is the same as Physics 221. Hours: lecture 3. *Prerequisite:* Physics 102, Mathematics 122. Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. **(Old Core)** An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite:* Chemistry 343. Spring semester. Prof. Ranck.

346 Atomic Structure Laboratory (Physics 221L)

2 credits. **(Old Core)** Experiments relating to the atomic nature of matter and the interaction of radiation with matter. Introduction to special computational techniques appropriate for the experiments. Hours: laboratory 6. *Corequisite:* Chemistry 343. Fall semester. Prof. Ranck.

352 Advanced Chemistry Laboratory I

3 credits. **(Old Core)** Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite:* Chemistry 344. Spring semester. Prof. Ranck.

361, 362 Chemistry Seminar I, II

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 362. Hours: seminar 1 (Fall), seminar 1 (Spring). Prof. Schaeffer.

370-379 Special Topics in Chemistry

Variable credit. **(Old Core)** Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites:* permission of instructor and department chair. Staff.

402 Advanced Inorganic Chemistry

3 credits. **(Old Core)** A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite:* Chemistry 344. Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. **(Old Core)** A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite:* Chemistry 344. Fall semester. Prof. Spangler.

451 Advanced Chemistry Laboratory II

4 credits. **(Old Core)** Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite:* Chemistry 242. Fall semester. Prof. Schaeffer.

461, 462 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 462. Hours: seminar 1 (Fall); seminar 1 (Spring). Fall, spring semester. Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control. *Clinical Chemistry*—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

490-495 Research in Chemistry

Variable credit. **(Old Core)** An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* permission of instructor. Staff.

496-499 Independent Problems in Chemistry

Variable credit. **(Old Core)** An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* permission of instructor. Staff.

Education 305 Practicum in Secondary Education: Science

3 credits. Teaching science in secondary schools. *Prerequisite:* Psychology 105; *Corequisite:* Education 308.

Department of Communications

Professor Moore (*Chair*)

Associate Professor Smith

Assistant Professors Byrne, Dominas, Severeid,
Wennberg

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the local access cable television production facility, ECTV, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, International Association of Business Communicators (Elizabethtown College Chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 41 credit hours required for a Bachelor of Arts degree with a *communications major* include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 225, 235, 248, 485; Computer Science 120 (Introduction to Computer Processing for the Macintosh), and 12 credit hours in a concentration. All majors are strongly encouraged to complete a minor area of study chosen in consultation with their advisor. Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of

career interest. The minor allows for complementary preparation in another discipline. Prior to preregistration for the junior year, the student must elect a communications concentration which requires 12 credit hours. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student to design, produce, and manage a variety of internal/external communications functions for business, industry, and other institutions. The student is required to complete Communications 215, 348 and two electives to be chosen from the following: Communications 301, 304, 316, 321, 336, 422.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are Communications 311, 351, 412, and one elective to be chosen from the following: Communications 215, 301, 304, 314, 316, 348, 422.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcasting and journalism. Required are Communications 311, either 314 or 316 and two approved electives to be chosen from the following: Communications 215, 304, 314, 316, 321, 336, 411, 422.

A minor in communications is offered to students majoring in other departments. The minor permits a student to reach a level of competency in written, spoken, and visual communications to complement their primary area of preparation. The 25 credit hours required for a minor in communications include Communications 109, 115, 125, 225, 205 (repeated for two semesters), Computer Science 120 (Introduction to Computer Processing for the Macintosh), and 9 credit hours of approved departmental electives at or above the 200 level.

No more than 57 credits in Communications may be counted toward graduation.

Admission Requirements for Communications Majors and Minors

Before being accepted into the major or minor, all students must demonstrate competency in language usage, keyboarding, and speaking. Language usage competency is determined by a placement test at the time of declaration. Students performing below C level are not permitted to be a declared major or enroll in courses beyond the 100 level. The test may be retaken once. Individuals who have not earned a C or better in a high school or equivalent typing course or pass a typing placement test at the time of declaration are placed by the department in a keyboarding course. Students who have not earned a C or better in a high school speech course must enroll in Com 105 Basic Speech. All students must have a 2.0 GPA to declare the major or minor and enroll in any courses above the 100 level.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practica often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practica are not repeatable and may count as elective credit within the major. Internship credits count only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 150 opportunities already negotiated with regional communications organizations.

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the College.

105* Basic Speech

3 credits. **(Power of Language)** Basic instruction in developing poise and confidence in speaking. Emphasis is placed on verbal and nonverbal communication, research, outlining, speech preparation, use of visual aids, and the rudiments of group dynamics and discussion. Staff.

109 Communications Theory

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on several levels, individual, interpersonal, and mass, examining such aspects as speech production, sender/receiver relationships, listening, nonverbal communication and the use of symbols. Students explore mass media from a human communication perspective. Prof. Dominas.

115* Media and Society

3 credits. **(The Social World)** The course in an introductory examination of the structures, functions, political, social, and economic impacts of mass media in the U.S. A goal is to help make students critical and analytical consumers of the mass media, including: newspapers, books, magazines, radio, television, film, public relations, and advertising. Prof. Moore, Wennberg.

125 Introduction to Media Production

3 credits. The course provides the design, theory and development of production skills and techniques for a variety of audio-visual materials, photography, and print materials. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials. Elements of desktop publishing are included. *Pre/corequisite Computer Science 120.* Prof. Wennberg.

205 A—D Applied Communications

.5 credit. Four semesters of participation in approved cocurricular activities is required of all majors. All participants must meet the standards of the activity in order to count toward meeting the requirement. Of the four semesters of participation, three must be in different, approved activities. These include: a. WWEC-FM, b. Forensics, c. *Etownian* and *Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any two activities. Enrollment is open only to communications majors or minors. A student may enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. *Graded Pass/Fail.* Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisites: Communications 105 or 109.* Profs. Severeid, Smith.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of desktop publishing are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 (for the Macintosh).* Prof. Wennberg.

225 Audio: Theory and Practice

3 credits. The technical and aesthetic fundamentals of audio field and studio production. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic audio projects. A general overview of the history of radio is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video: Theory and Practice

3 credits. The technical and aesthetic fundamentals of video field and studio production and postproduction. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic video projects. A general overview of the history of broadcast television is included. Students are required to purchase production materials for the course. *Prerequisites: Communications 125 and 225.* Prof. Dominas.

248 Communication Law and Issues

3 credits. An examination of the law of the field of communications as well as its history and effects. Current ethical issues are explored through case studies. *Prerequisite: Communications 115 or permission of instructor.* Prof. Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. *Prerequisite: Communications 105 or 109 or permission of instructor.* Fall semester. Staff.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. *Prerequisite: Communications 105 or 109 or permission of the instructor.* Spring semester, odd numbered years. Staff.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of the instructor.* Prof. Byrne, Staff.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: For majors: Communications 311 or permission of the instructor. For Professional Writing students: two Professional Writing courses and permission of the instructor.* Spring semester, odd numbered years. Prof. Byrne.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, editing copy, continuity, and news for radio and television. *Prerequisite: Communications 225, 235, 311, or permission of instructor.* Spring semester. Profs. Sevarcid, Smith.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites: Communications 225 and 235.* Fall semester, even numbered years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites: Communications 125 and 225. Communications 205D (ECTV) may be a corequisite.* Spring semester. Prof. Dominas.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisite: Communications 125, 225, or permission of instructor.* Fall semester. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite: Communications 311 or permission of instructor.* Fall semester. Prof. Byrne.

370-379 Special Topics

Variable credit. Periodic offerings of the Department or directed study in topics of special interest to advanced majors. Staff.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. *Prerequisites: Communications 115, 125, 225, or permission of instructor.* Fall semester, even numbered years. Staff.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite: Communications 351.* Spring semester. Prof. Byrne.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisite: Communications 225, 248.* Fall semester, odd numbered years. Staff.

470-479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professionals in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisite: Practicum—at least junior standing; is taken with a campus-based sponsor for elective credit in the major; may not be repeated. Internship—senior standing, for at least 12 credits and a 2.70 GPA and a 3.0 GPA in the major; Must be taken full-time for an entire semester off campus, and used only as free elective..* Profs. Moore, Byrne.

480-489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites: at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite: senior standing.* Profs. Moore, Wennberg.

Department of Computer Science

Professor C. Kreider
Associate Professors Leap, Tulley (*Chair*)
Assistant Professor Bina
Instructor Evans

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every

aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *three majors*—one in *computer science*, one in *computer science/business information systems*, and another in *computer engineering*, which is offered in conjunction with the Department of Physics. All three majors provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 8250 cluster is used primarily for administrative purposes. The VAX 3100 is dedicated to academic use.

The College also has available for student use a variety of micro and personal computers. These include Apple, IBM, and Zenith computers. Interconnection between the computers is provided.

The computer science department maintains an Intel 80386/33 based multiuser timesharing computer system running the UNIX operating system. This system is housed in the department's computing laboratory along with a number of other 80386 and 80286 based PC's. All departmental computers are connected to a local area network (LAN) based on ethernet technology. The department also maintains a computer interfacing and electronics design laboratory.

The department strongly recommends that students purchase their own MS DOS-based personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase Epson, IBM and Apple PC's at excellent prices. Students can also build their own personal computer as part of several computer science courses.

Major software systems available on the computers include most major computer languages (Actor, Ada, BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, Dbase III+, Lotus 1-2-3, and WordPerfect); both CODASYL network type and

relational data base management systems; and a screen forms management system. The College has several word processing packages in use.

All computer science majors and students enrolled in courses requiring use of the VAX computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses, including Computer Science 121, 122, 221, 222, 332, 341, and 490.

The computer science major is further required to take Computer Science 321, 322, and either 421 or 422, plus nine credits of computer science electives; Mathematics 121, 122, 151, 201, and either 222 or 252; and an area elective which consists of four courses in one area other than computer science. Area elective courses may not be chosen from among those required for or elected to meet Core or international studies requirements and must be approved by the computer science faculty advisor. A minor in another field also satisfies this area elective requirement.

The computer science/business information systems major is further required to take Computer Science 135, 335, 409, and nine credits of computer science electives; Mathematics 117, 151; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The computer engineering major requirements are specified under the Department of Physics.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of an appropriate programming language, data representation, file handling, and the use of subprograms. (Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor). Prof. Reeder.

120 Introduction to Micro Computer Applications

3 credits. An overview of computer concepts, uses, and issues. Software packages and computer applications (database, spreadsheet, and word processing) are a major component. Staff.

121 Computer Science I

1 or 3 credits. **(Mathematical Analysis)** The introductory concepts of computer organization, data representation, algorithmic development and structured programming. Operating systems and Input/Output devices are covered as they relate to the user. The student is expected to master the fundamentals of a high-level programming language. *Prerequisites:* high school algebra and trigonometry. (Students who have successfully completed Computer Science 115 will receive one credit for this course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis recursion, internal sort/search methods, string processing, simple data structures and file processing. Assembly language concepts and internal operations of the CPU are introduced. *Prerequisite: Computer Science 121.* Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Staff.

221 Algorithms and Data Structures

3 credits. Methods for structuring data and the algorithms for handling them are developed. Topics include abstract data types, including stacks, queues, linked lists, trees, and storage allocation and management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. Fall semester.

322 Formal Languages

3 credits. The theoretical and practical analysis of the syntax of programming languages. Topics include the concepts and terminology associated with grammars, finite state machines, and parsing by recursive descent. *Prerequisites: Computer Science 221, 321.* Spring semester. Prof. Tulley.

332 Computer Organization

3 credits. Introduction to Boolean algebra, logic circuit and design, and their use in computer architecture. Basic parts of computer systems are studied, including storage, control, and input/output systems. *Prerequisite: Computer Science 222.* Fall semester. Prof. Bina.

333 Computer Systems Interfacing

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. Prof. Leap.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite: Computer Science 135.* Prof. Leap.

340 Business Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, software applications, and information; systems design; and an investigation of information systems of the various functional areas within the organization. *Prerequisites: Computer Science 120 or 121; Business Administration 215, 265.* Spring semester. Prof. Kreider.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisites: Computer Science 121 and either 122 or 135.* Fall semester. Prof. Evans.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites: Computer Science 221; Mathematics 151; or permission of instructor.* Fall, alternate years. Prof. Tulley.

361 Computer Graphics

3 credits. Introductory concepts of computer graphics, including hardware, software, data storage and man/machine interaction. The student is expected to become conversant with computer graphics hardware and be able to create software to provide the interactive generation of graphical output. *Prerequisites: Computer Science 221 and Mathematics 201.* Fall semester. Prof. Bina.

362 Comparison of Programming Languages

3 credits. Comparative study of programming language concepts including data objects and data types, scope, procedures, abstraction mechanisms, sequence control, exception handling and concurrency, providing a framework for understanding language design. Intended to provide the necessary tools for critically evaluating existing and future languages and language constructs. *Prerequisite: Computer Science 221.* Prof. Tulley.

370-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite: permission of instructor.* Staff.

409 Data Base and Information Systems

3 credits. A study of information systems design and data base management techniques. Topics include information retrieval theory, data base design, data models, maintenance, file security, data reliability, CODASYL recommendations on DBMS. *Prerequisites: Computer Science 335 and either Computer Science 221 or permission of instructor.* Spring semester. Prof. Evans.

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers, interpreters, and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites: Computer Science 222, and either Computer Science 322 or permission of the instructor.* Fall semester. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, device drivers, and interrupt handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites: Computer Science 332.* Spring, alternate years. Prof. Bina.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite: approval of the computer science faculty.* Prof. Tulley.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite: approval of the computer science faculty and Provost.* Staff.

3 credits. A directed project or study requiring faculty acceptance of a proposal and a final report and defense of work. *Prerequisites: junior or senior status and permission of instructor.* Staff.

Earth Science

See Department of Physics, page 53.

Department of Education

Professor Rice

Associate Professors Bartoli, Boothby, Fox,
Orlando

Assistant Professors Bauman, Blue (*Chair*)

Bachelor of Science

The department offers major programs in Early Childhood (N-3) and Elementary Education (K-6) which combine a strong liberal arts education with the development of high professional competence. Supported by the Core Program, the student's minor, and elective coursework, these major programs bring together in a creative way the student, the school, and the subject to be taught. Further, the department stresses the importance of supervised field experiences which complement on-campus courses in education. A dual major in Early Childhood and Elementary Education is also available.

Bachelor of Arts or Bachelor of Science

Programs in Secondary Education are available in selected academic areas (English, Mathematics, Biology, Chemistry, Physics, General Science, and Social Studies). Carefully designed work in the academic or interdisciplinary major, the Core Program, and electives, qualifies students for the degree appropriate to that major. A program in Music Education (K-12) is also available (see the Department of Fine and Performing Arts).

Certification

The department and the College act as agents of the Commonwealth in the teacher certification process for those meeting the standards detailed below.

General Requirements of the Programs

Admission to the Programs

1. Make written application to the Department of Education after:

- a) Completion of a minimum of 30 credit hours with a G.P.A. of 2.5 or higher

- b) Completion of Education 205 and 245 or 230 (with a minimum grade of C)
2. Submit a TB medical clearance
3. Provide a record of Act 34 clearance
4. Declare a college approved minor (for Early Childhood and Elementary Education majors)
5. Qualify for recommendation by members of the Department of Education and/or the major department(s)
6. Present a portfolio demonstrating interest and/or experience in professional education (may include: above items, letters of recommendation, descriptions of experience, written essay, etc.)

Progress in the Programs

1. Receive a grade no lower than C in any course required in the program
 2. Receive passing scores from the General Knowledge and Communication Skills tests of the Core Battery of the NTE
 3. Maintain a portfolio demonstrating interest and experience in professional education
- Note: Students are evaluated at the conclusion of each semester and may be advised to withdraw at any time the department determines such action appropriate.

Exit from the Programs

1. For the major:
 - a) Complete all requirements of the major with a G.P. A. of 2.0 or higher
 - b) Complete the College approved minor (Early Childhood and Elementary Education only)
2. For certification:
 - a) Complete all requirements of the program with a G.P.A. of 2.5 or higher
 - b) Earn a grade of C+ or higher in the professional internship
 - c) Complete a College approved minor (Early Childhood and Elementary Education only)
 - d) Receive passing scores on the Professional Knowledge test of the Core Battery and on the Specialty Area test of the NTE
 - e) Receive written recommendation by members of the Department of Education and/or the major department(s)
 - f) Present a portfolio summarizing one's activities and experiences in professional education (may include: evaluations, sample lessons or units, resume, references, videotape(s), etc.)
 - g) Show evidence of a valid TB and Act 34 clearance
 - h) Complete application for certification

Special Requirements of the Programs

Students in the *Elementary Education Program* must complete Education 205, 245, 250, 265, 325, 335, 345, 355, 365, 385, and 472; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 471; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Dual Elementary and Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 474; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Secondary Education Program* must complete an academic or interdisciplinary major as outlined by an area which supports a certification program; complete Education 205, 230, 305, 415, and 473; and satisfactorily complete all other program requirements.

205 Foundations of Education

3 credits. A study of the historical, philosophical, sociological, and political foundations of education. Emphasis is on critical understanding of educational thought and practice in order to identify, interpret, and search for resolution of educational controversies and problems.

230 Analysis of Instruction

4 credits. A study of factors underlying and supporting the teaching and learning process. Topics include: human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, social learning, instructional design and management, and media and technology. Field experience required. *Prerequisite: Education 205.*

245 Teaching and Learning Processes

3 credits. A study of factors underlying teaching and learning processes, including human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, and context-specific analysis. Requires field experience.

250 Foundations of Literacy

3 credits. A study of emergent literacy and strategies for teaching beginning reading in an integrated language arts curriculum. Includes an introduction to children's literature. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 265.*

265 Instructional Media and Technology

3 credits. A study of instructional media and basic media design stressing planning, producing and applying instructional media. This course includes evaluation and use of commercial software, data bases, desktop publishing, simulations and problem solving for elementary certification candidates. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 250.*

305 Methods of Secondary Education

4 credits. A study of the instructional methodology of an academic discipline under the guidance of a clinical professor in the academic major. Field experience required. *Prerequisite: Education 230.*

315 Early Childhood Education

3 credits. A study of programs for young children with regard to theoretical base, curricular goals, teacher role, physical environment, and program sponsorship. Requires field experience. *Prerequisites: Education 250 and 265.*

320 Special Methods in Early Childhood Education

3 credits. A study of developmentally appropriate procedures and materials for the preschool child, emphasizing the importance of play in Early Childhood programs. Requires field experience. *Prerequisites: Education 250 and 265.*

325 Mathematics in the Elementary School

3 credits. A study of how children develop a background of understanding and skill in mathematics, concentrating on the development of problem solving, reasoning, communication skills in mathematics, and connecting mathematics and the real world. Additional focus will be on organization for instruction, alternative means of evaluation, teaching special needs and at-risk students. *Prerequisites: Education 250 and 265. Corequisites: Education 335, 345, 355, 365, and 385.*

335 Science and Health in the Elementary School

3 credits. A study of science processes in an elementary school program; the utilization of multiple resources, organization, management, evaluation, instructional strategies, and integration of science and health in the elementary school program. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 345, 355, 365, and 385.*

345 Reading and the Integrated Curriculum

3 credits. A study of reading instruction and its integration across the elementary school curriculum. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 355, 365, and 385.*

355 Writing and the Integrated Curriculum

3 credits. A study of writing instruction and its integration across the elementary school curriculum. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 345, 365, and 385.*

365 Social Studies for Elementary Education

4 credits. A study of content, teaching strategies, materials, organizing approaches, and curriculum for teaching social studies in the elementary school. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 345, 355, and 385.*

371-380 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite: permission of instructor.*

385 Elementary Education Practicum

1 credit. Supervised field placement. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 345, 355, and 365.*

415 Reading in the Content Area

2 credits. A study of the theory and practice of secondary education with an emphasis on developmental reading and reading in the content area. *Prerequisite: Education 305. Corequisite: Education 473.*

471 Professional Internship

16 credits. Student teaching for seven weeks in a pre-K setting and for seven weeks on a K-3 setting. *Prerequisites: Education 315, 320, 325, 335, 345, 355, 365, and 385.*

472 Professional Internship

16 credits. Student teaching at the K-6 level. *Prerequisites: Education 325, 335, 345, 355, 365, and 385.*

473 Professional Internship

14 credits. Student teaching at the 7-12 level. *Prerequisite: Education 305. Corequisite: Education 415.*

474 Professional Internship

17 credits. Student teaching for a minimum of ten weeks in a K-6 setting and for six weeks in a pre-K setting. *Prerequisites: Education 315, 320, 325, 335, 345, 355, 365, and 385.*

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

490-498 Special Topics

Variable credit. Courses designed to give students opportunity to pursue work in an area of major interest in such topics as art in the elementary school, creativity, computers in education, children's literature, developmental reading, learning disabilities, gifted and talented education.

Engineering

See *Department of Physics*, page 53.

Department of English

Professors Campbell (*Chair*), Dwyer, Sarracino
Associate Professors Rohrkemper
Assistant Professors Hergert, Martin, Mead (*Director of Professional Writing Program*), Shumaker
Lecturer: O'Donnell (*Supervisor, English Secondary Education Program*)

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary studies is the fundamental aim of the Core Program and of the rigorous and comprehensive concentrations which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The literature concentration requires English major courses 109, 301, 394 and one course at the 300 level in literary forms (English major courses with middle digit 1); three courses at the 300 level in literary movements (English major courses with middle digit 2); one course at the 300 level in individual authors (English major courses with middle digit 3); two courses at the 300 level in American Literature (English major courses with middle digit 4); and an additional nine hours of electives in English at the 200-300 level (excluding English core courses).

The professional writing concentration requires English 109, 185, 301, 393; Communications 125; Computer Science 120; one English major course at the 300 level with middle digit 1; two English major courses at the 300 level with middle digit 2; one English major course at the

300 level with middle digit 3; one English major course with middle digit 4; and 12 hours in writing electives to be selected from English and Communications writing courses: English courses with middle digit 8, with no more than two courses at the 200 level; English 311, and Communications 311, 314 (no more than one course and not necessarily either).

The secondary education concentration requires English 109, 185, 306, 385; one English major course with middle digit 1; one English major course with middle digit 2; one English major course with middle digit 3; two English major courses with middle digit 4; one English course from 305, 381, 384; an additional nine hours of electives in English major courses at the 200-300 level; and Education 205, 230, 305, 415, and 473.

English majors in all tracks must take a Modern Language course at the 112 level or higher if so placed.

English majors may not use any English 100 level core courses (except English 100 or English 150) to satisfy core or major requirements.

The Department of English offers a *minor* in either literature or professional writing consisting of 24 hours distributed as follows: **Literature** – English 109, 185, one English course at the 300 level with middle digit 1, one English course at the 300 level with middle digit 2, one English course at the 300 level with middle digit 3, one English course at the 300 level with middle digit 4, and two electives at the 200-300 level; **Professional Writing** – English 109, 185, one English course at the 200 level with middle digit 8, one English course at the 300 level with middle digit 1 or 3, one English course at the 300 level with middle digit 2, one English course at the 300 level with middle digit 4, one English course at the 300 level with middle digit 8, and one Professional Writing elective from the Department of English offerings at the 200-300 level (must be middle digit 8).

011 Fundamentals of Composition

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. *Credits are not applicable to the 125 required for graduation.* Staff.

100* Writing and Language

3 credits. (**Power of Language**) A writing course focusing on writing as a process of discovery of ideas, drafting, revision, and editing. Students read, write, and speak about a variety of aspects of the power of language. Assignments may include but are not limited to linguistic analysis, history of the language, and the analysis of language in and out of contexts. Topics include writing and literature, writing and persuasion, and writing and society. *Student may take English 100 or 150, but not both.* Staff.

105* Introduction to Literature

3 credits. (**Cultural Heritage and Old Core**) A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature. Readings are drawn from major authors such as Homer and Shakespeare. Staff.

109 English Studies

3 credits. The study of English as an academic discipline with emphasis on close reading and theories of textual analysis, library research on literary, pedagogical, and rhetorical topics, and terminology of language and literary analysis, among other primary considerations. **Required of English majors and recommended for those considering an English major.** Staff.

110* Literature: Expressive Form

3 credits. **(Creative Expression)** How different forms of literature produce different aesthetic experiences and responses. The course will focus on a specific theme such as war, the self, the family, or contemporary culture to make comparisons between genres more obvious. Poetry, drama, short stories, essays, films, and novels are possible genres for consideration. Staff.

113* Drama: Motive and Character

3 credits. **(Value and Choice)** The analysis of character and motive in 8-10 plays. A psychological approach will emphasize how actions and words reveal personality. Staff.

115* The Lyric Tradition

3 credits. **(Cultural Heritage)** The Lyric Tradition: a study of the English and American lyric from Old and Middle English through the Renaissance, 18th, 19th, and 20th Centuries up to the present day. Staff.

116* Film as Literature

3 credits. **(Creative Expression)** An introduction to film as an art form with particular attention to the discourse of film: how film "speaks" to us; how we speak about film. Staff.

121* Money and Status

3 credits. **(Values and Choice)** This course begins by examining Max Weber's analysis of the "Protestant Work Ethic," and other political, philosophical and historical underpinnings of wealth in America, including the earliest visions of America as a new Eden, an abundant paradise. Students will read ten important works, and each student will keep a journal to be used in discussion groups and also as a source for essays. Of five or six essays written, several will be selected by the student to be rewritten and handed in for grading. There will also be periodic short quizzes and a final examination. Prof. Sarracino.

135* Shakespeare Through Performance

3 credits. **(Creative Expression)** Students gain a deep critical and imaginative understanding of Shakespeare's plays and a knowledge of the Elizabethan theatre and its stage conventions by reinforcing textual analysis with informal performance of scenes from several key works. Staff.

150* Advanced Writing and Language

3 credits. **(Power of Language)** A writing course designed to explore the writing process while studying the history of the English language, its past and present uses and powers. Students will be writing, reading, and speaking about a variety of aspects of the history and power of language. Assignments may include but are not limited to linguistic analysis, history of the language, de-constructive techniques, and the analysis of language in and out of contexts. *Students may take English 100 or 150, but not both.* Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisite: permission of the instructor.* Profs. Hergert, Mead, Rohrkemper.

227 Classicism and Romanticism

3 credits. **(Cultural Heritage)** A study of the essential elements of English Classicism and Romanticism as revealed through the works of four major English writers, two each from the Eighteenth Century and the Romantic Period. **Students who have completed English 323 or 327 may not enroll in 227.** *Prerequisite: Completion of Power of Language core requirement.* Prof. Dwyer.

251* The Literature of Laughter

3 credits. **(Creative Expression)** A study of works from a variety of literary genres which create and comment on humor. Students will read a fable, short stories, novels, light verse, a play, and humorous essays, as well as essays which deal with the theories of humor. Comic forms represented include humorous social commentary, satire, and balck comedy. Works to be read include "The Praise of Folly," "A Modest Proposal," "The Mysterious Stranger," and *Catch-22*. *Prerequisite: Power of Language.* Prof. Hergert.

281* Writing and Analyzing the Short Story

3 credits. **(Creative Expression)** Students will analyze classic short stories using the language and concepts of literary criticism through discussion, oral presentations, and a major research paper. Emulating classic literary models, they will write original short stories, revising according to detailed critiques by their peers and the instructor. *Prerequisite: Power of Language.* Prof. Shumaker.

282 Writing in the Health Professions

3 credits. Students will read and analyze the discourse common to the medical professions in addition to literature about the profession. Students will practice the forms of medical writing, culminating in a research project. *Prerequisite: Permission of instructor, Professional Writing majors must have had English 185.* Spring semester, alternate years. Prof. Mead.

283 Writing for Government and the Judicial System

3 credits. A survey of the types of writing common in government, politics, and law. Students will practice basic legal analysis, statistical analysis, persuasion, and more advanced forms of legal writing such as the appellate brief. **Highly recommended to pre-law and political science majors.** *Prerequisite: Permission of instructor. Professional Writing majors must have had English 185.* Prof. Mead.

284 Writing in the Social Sciences

3 credits. Students will analyze articles, books, reviews, and research in the fields of psychology, political science, anthropology, sociology, history, and economics. In addition, students will practice writing a variety of research forms, including the observation, experiment, survey/interview, etc. *Prerequisite: Professional Writing majors must have had English 185.* Alternate years. Prof. Mead.

301 History of the English Language

3 credits. A combination of a history of language and an introduction to linguistics related to literature, stylistics, and composing. Profs. Martin, Mead.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and/or the Learning Center. *Prerequisite to professional semester.* Prof. O'Donnell.

311 Autobiography

3 credits. A critical study of this literary form of non-fiction writing and instruction in writing autobiographically. Professional writing majors may use this course to fulfill either the literature or the upper-level writing requirement. Prof. Mead.

312 English Drama Before 1900

3 credits. **(Old Core)** A study of representative English plays, excluding Shakespeare, from the Middle Ages to the twentieth century, emphasizing Elizabethan and Jacobean drama. Fall semester, alternate years. Prof. Martin.

313 Modern Drama

3 credits. **(Old Core)** A study of drama from the realism of Ibsen through naturalism, expressionism, and symbolism to the current avant garde theatre. Spring semester. Prof. Campbell.

314 The English Novel Before 1900

3 credits. **(Old Core)** A study of selected masterpieces from Defoe to Hardy as works of prose art and as turning points in the development of the form. Fall semester, alternate years. Prof. Campbell.

317 Modern Novel

3 credits. **(Old Core)** A study of the work of major novelists of the twentieth century with emphasis upon the development of the novel as an art form. Fall semester, alternate years. Prof. Rohrkemper.

318 Modern Poetry

3 credits. **(Old Core)** A study of at least three major twentieth-century poets as well as selections from writers who have published within the last thirty years. Spring semester. Prof. Dwyer.

320 Concepts of the Renaissance

3 credits. **(Old Core)** A study of the "ruling ideas" of the Renaissance in Britain; representative nondramatic writers with an emphasis on Spenser and lyric poetry. Fall semester, alternate years. Prof. Martin .

322 The Seventeenth Century

3 credits. **(Old Core)** A study of the major nondramatic writers, excluding Milton, from 1600 to 1660: among them, Donne, Jonson, Herbert, and selected prose writers. Spring semester, alternate years. Prof. Martin.

323 The Restoration and Eighteenth Century

3 credits. **(Old Core)** A study of poetry and prose from 1660 to 1800, with an emphasis on Dryden, Swift, Pope, Sterne, and Johnson. Fall semester, alternate years. Prof. Dwyer.

327 The Romantic Movement

3 credits. **(Old Core)** A study of selected poetry and prose most significantly embodying the central concepts and achievements of English Romanticism. Fall semester, alternate years. Prof. Dwyer.

328 The Victorian Period

3 credits. **(Old Core)** A study of selected poetry and prose from Tennyson to Hardy, particularly emphasizing the changing response of the artist to the conflicts stemming from the industrialization of the period. Spring semester, alternate years. Profs. Sarracino, Shumaker.

329 Modern British Literature

3 credits. **(Old Core)** A study of poetry and prose from the end of the nineteenth century to the middle of the twentieth, with an emphasis on the development of a modern aesthetic in the works of such writers as Conrad, Yeats, Joyce, Lawrence, Woolf, and Auden. Fall semester, alternate years. Profs. Rohrkemper, Shumaker.

331 Chaucer

3 credits. **(Old Core)** A study of representative works of Chaucer. Spring semester, alternate years. Prof. Martin.

332 Shakespeare

3 credits. **(Old Core)** A study of representative works of Shakespeare. Spring semester, Profs. Campbell, Martin.

333 Milton

3 credits. **(Old Core)** A study of representative works of Milton. Spring semester, alternate years. Prof. Martin.

337 Eighteenth Century English Authors

3 credits. **(Old Core)** A study of representative works of one or two major authors such as Pope, Swift, Fielding, and Goldsmith. Spring semester, alternate years. Prof. Dwyer.

338 Nineteenth Century English Authors

3 credits. **(Old Core)** A study of representative works of one or two major authors such as Blake, Keats, Dickens, and Hardy. Fall semester, alternate years. Profs. Campbell, Shumaker, Staff.

340 The American Romantic Movement

3 credits. **(Old Core)** A study of American Transcendentalism, including its sources, and of major figures of the period such as Hawthorne, Melville, Whitman, Emerson, and Thoreau. Alternate years. Prof. Sarracino.

341 The Rise of Realism in American Literature

3 credits. **(Old Core)** A study of American literature in the late nineteenth and early twentieth centuries, with emphasis on such writers as Dickinson, Clemens, Robinson, Frost, Dreiser, and Fitzgerald. Spring semester, alternate years. Prof. Sarracino.

342 Experiments in American Literature

3 credits. **(Old Core)** A survey of major American writers of the twentieth century, authors such as Pound, Eliot, Faulkner, Williams, Stevens, Stein, and Hemingway. Fall semester, alternate years. Prof. Rohrkemper.

343 American Authors

3 credits. **(Old Core)** A study of the writings of one or two American authors such as Melville, James, Whitman, and Faulkner. Spring semester, alternate years. Profs. Rohrkemper and Sarracino.

352 The Fantastic in Literature

3 credits. **(Old Core)** A study of major works of fantasy (Alice in Wonderland, The Hobbit, The Golden Key, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic" Fall semester, alternate years. Prof. Sarracino.

357 Women and Literature

3 credits. **(Old Core)** A study of the effects on women writers and readers of a male dominated literary tradition. Alternate years. Prof. Shumaker.

370-379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/ faculty interest. Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite: permission of instructor.* Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentation of technical and scientific information. *Prerequisite: Professional Writing majors must have had English 185 and one 200 level Professional Writing course.* Profs. Hergert, Mead.

383 Managerial Communication

3 credits. A course emphasizing the concerns of administrative writers and including instruction in oral and graphic communication of business information. *Prerequisite: permission of instructor.* Staff.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course in advanced writing and professional editing. *Prerequisite: English 185 and permission of instructor, Professional Writing majors must also have had a 200 level Professional Writing course.* Profs. Hergert, Mead.

385 Writing for Publication

3 credits. Advanced study of copy editing and of techniques for promoting one's own manuscripts. *Prerequisite: Permission of instructor. Professional Writing majors must have had English 185 and a 200 level Professional Writing course.* Prof. Hergert.

393 Seminar in History and Theory of Rhetoric and Composition

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisites:* Professional Writing concentration, English 185, and one 200 level Professional Writing course. Spring semesters, alternate years. Prof. Mead.

394 Senior Seminar in Literary Theory

3 credits. A seminar for literature majors on the history of literary theory and criticism. *Prerequisites:* English Literature concentration, or permission of the instructor. Fall semester, alternate years. Prof. Dwyer.

470-479 Internships

1-3 credits. On-campus internships may be requested in the student's sophomore, junior, or senior year. Off-campus internships are for students proven competent in on-campus internships or judged as having special aptitudes for the specific internship. *Applications for internships in the Department of English are due March 15 for summer and fall semesters, and November 15 for spring semester.* Prof. Mead.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite:* Psychology 105; *corequisite:* Education 308, 309. Prof. O'Donnell.

Department of Fine and Performing Arts

Professors Harrison (*Chair*), Kitchen
Visiting Professor Roberts
Associate Professors Douglas, Stites
Assistant Professors Friedly, Palmquist,
Rohrbacher, Severeid
Instructors Hunter, Muan
Lecturer Seyler

Bachelor of Arts; Bachelor of Science

The department offers three majors which lead to the degree of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, or Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theatre. Minors are offered in Visual Art, Music, and Fine and Performing Arts. The music programs are fully accredited by the National Association of Schools of Music.

Fine and Performing Arts

The *minor in The Fine and Performing Arts* is intended for those students with a broad *interest* in the Arts; it does not necessarily demand a *skill* in any particular arts area.

The minor includes one introductory course with an academic emphasis and one with an experiential emphasis in each discipline. The capstone course, with an emphasis on criticism, integrates the disciplines. Required courses are Art 101 or 106, and Art 155; Mu 105; Th 105; Da 101; Mu 115 or 101-103; Th 155 or 165; FAPA 455, The Arts in America Today. The FAPA minor totals 22 credits.

455 The Arts in America Today

3 credits. An investigation of contemporary principles and common goals among the arts in American society with an emphasis on the development of critical and evaluative skills. *Prerequisite:* FAPA minors must previously complete all other coursework for the minor; others must have permission of the instructor. Spring Semester. Staff.

Visual Arts

The academic and the practical courses in the visual arts program aim to refine students' creative potential, expand their judgment of the visual arts, and discern the contrasts and relationships among the arts of our Western culture and those of non-Western traditions.

Minor in Visual Arts. The minor in Visual Arts requires Art 105, 106 or 220, 155, 203 or 324, and six hours of electives in visual arts courses. Communications 315 may be one of the elective courses.

105* Drawing I

3 credits. (**Creative Expression and Old Core**) Theory and application of two-dimensional design principles in a variety of drawing mediums, with an emphasis on the exploration of various aesthetic possibilities. Profs. Friedly, Muan, Roberts.

106 Ceramics I

3 credits. (**Old Core**) Introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

155* Introduction to Art

3 credits. (**Cultural Heritage and Old Core**) A comparative approach to works of the modern epoch, selected from both Western and non-Western traditions. Prof. Muan.

203* Twentieth Century American Art

3 credits. (**Cultural Heritage and Old Core**) An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. Studio easel painting in opaque media, with stress on pictorial organization and application of color theories. *Prerequisite:* Art 105 or permission of the instructor. Prof. Roberts.

206 Ceramics II

3 credits. An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite:* Art 106. Prof. Friedly.

220 Sculpture

3 credits. (**Old Core**) An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and instruction in the use of the sculptor's materials and techniques. Prof. Friedly.

324 American Arts/Crafts

3 credits. **(Old Core)** A comprehensive scan of the fine and decorative arts of the United States from Colonial beginnings to the present, citing their derivation from social, ethnic, and aesthetic influences. Staff.

351 Printmaking

3 credits. Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite:* Art 105 or permission of the instructor. Prof. Friedly.

375 Multiple Perspectives in Visual Art

3 credits. **(Old Core)** Art as image and idea in the history of mankind, with strong cross-cultural emphasis on the Art of Native America, Africa, and Oceania. Fall Semester. Prof. Roberts.

Dance

DA 101* Interpretive Movement

1 credit. **(Physical Well Being and Old Core)** Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Graded P/NP. Prof. Williams-Henry.

DA 102* Introduction to Ballet

1 credit. **(Physical Well Being and Old Core)** Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Graded P/NP. Prof. Williams-Henry.

Music

The music courses are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained at the department office.

The department has adopted requirements for junior standing for music majors. A copy of these requirements is available in the department office.

The music education major requires Music 100, 101, 102, 103, 104, 201, 202, 203, 204, 205, 231, 234, 237, 238, 301, 311, 312, 321, 322, 343, 344, 440, 441, 442, 443, 471, a minimum of twelve hours of applied music instruction, a minimum of seven credit hours in ensemble participation, a senior recital, and Education 205.

The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 100, 101, 102, 103, 104, 141, 150, 151, 201, 202, 203, 204, 205, 231, 234, 237, 252, 301, 321, 343, 353, 354, 440, 441, 442, 443, 455,

456, 473, 474, 475, 479, a minimum of twelve semester hours in applied music instruction, a senior recital, and a minimum of six hours credit in ensemble. A six-month internship in an approved clinical facility is required for the music therapy degree and is taken after the completion of the four-year music therapy program.

The music therapy program is approved by the National Association for Music Therapy and the National Association of Schools of Music.

In order to graduate, a music therapy or music education major must maintain the following standards:

(1) *A music therapy major* must earn a grade of C- or better in all music and music therapy courses. *A music education major* must earn a grade of C- or better in all music and music education courses, and in Education 205 or 215.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicums and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

The Bachelor of Arts in Music normally requires Music 100, 101, 102, 103, 104, 201, 202, 203, 204, 205, 321, 322, 419, 440, 441, 442, 443, twelve semester hours credit in applied music, a senior recital, and three hours of ensemble credit. The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental advisor, each Bachelor of Arts music major works out a program which includes at least 40 hours of music courses.

The Minor in Music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The Minor in Music requires Music 101-103; 102-104; 105; 415 or 417 or 441 or 442 or 443; four semesters of instruction in one applied music area; minimum of two credits of music ensemble participation; a minimum of three credits of music electives; and attendance at Repertoire Class (Music 100) for four semesters.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to pre-college students, adults, and college students who desire to take instruction without credit. Instruction is available from departmental faculty and other qualified teachers. Interested persons should contact Prof. Debra Seyler, director of the Preparatory Division.

100 Repertoire Class

0 credit. This class provides performance opportunities for students in applied music. It meets for 1/2 hour each week and is required for all music majors and minors who are enrolled for applied music instruction.

101 Music Theory

2 credits. (Old Core) Fundamentals of music theory, harmony, and form, with emphasis on scales, keys, modes, and notation. Fall semester. Prof. Harrison.

102 Music Theory

2 credits. (Old Core) A continuation of Music 101, with an introduction to nonharmonic tones and seventh chords. Includes binary and ternary forms. *Prerequisites:* Music 101, Music 103; *permission of instructor.* Spring semester. Prof. Harrison.

103 Fundamentals of Sight Singing and Training

1 credit. Development of visual, aural, and basic keyboard skills related to the theoretical and analytical materials covered in Music 101. *Corequisite:* Music 101. Prof. Rohrbacher.

104 Sight Singing and Ear Training

1 credit. A continuation of 103. *Prerequisite:* Music 103 or *permission of instructor.* (Successful completion of Music 104 is a pre-requisite for Music 201.) and Spring semester. Prof. Rohrbacher.

105* Introduction to Music Literature

3 credits. (Cultural Heritage and Old Core) Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Douglas, Harrison, Sites.

106* Interpretation of Music

1 credit. (Creative Expression) This is a course for general college students who can read music and who wish to participate in a musical ensemble or continue private lessons. It is designed to supplement the musical experience by developing a deeper understanding of musical interpretation, as distinct from technique. In the lectures which discuss particular aspects of interpretation, examples from those works being prepared for performance in the ensembles and lessons will be used. This course fulfills the AU core requirement in "Creative Expression" when coupled with enrollment in an ensemble or private instruction for both semesters the same academic year in which it is taken. It may also be taken to fulfill old core requirements, or as an elective. One 50-minute class meeting per week. Spring semester. Prof. Kitchen.

111 Voice Class

1 credit. (Old Core) Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Prof. McKeel.

115* Music Fundamentals at the Keyboard

3 credits. (Creative Expression and Old Core) This course provides the student with basic skills in producing and reading music at the keyboard. Attention is given to ear training, basic keyboard technique, and musicianship, as well as to sight reading. The course utilizes the department's new digital piano laboratory. Daily practice is required. Fall and Spring. Prof. Seyler.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite:* music major. Prof. Seyler.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. Prof. Cullen.

120 Guitar Class

1 credit. (Old Core) A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite:* Music 119 or *permission of instructor.* Prof. Cullen.

141 Recreational Music

2 credits. Survey of recreational music resources and activities, with emphasis on the development and application of leadership and music performance skills in recreational and therapeutic settings. *Prerequisite:* music major or *permission of instructor.* Spring semester. Prof. Rohrbacher.

150 Music Therapy Seminar

0 credit. This weekly seminar offers music therapy majors a forum for sharing problems, successful procedures and plans or clinical experiences. Invited guests often make presentations. Required of all music therapy majors each semester. Prof. Rohrbacher.

151 Introduction to Music Therapy

2 credits. A survey of music therapy through lecture-demonstration sessions, readings, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite:* music major or *permission of instructor.* Fall semester. Prof. Rohrbacher.

201 Advanced Music Theory

2 credits. Advanced harmony including seventh chords, chromatic harmony, and form and analysis. 18th-century Counterpoint is introduced. *Prerequisite:* Music 102, 104. Fall semester. Prof. Schroeder.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on 19th and 20th century harmonic practice. Includes compositions using 18th century contrapuntal techniques. *Prerequisite:* Music 201, 203. Spring semester. Prof. Douglas.

203 Advanced Sight Singing and Ear Training

1 credit. Continued emphasis on reading and dictation skills. Fall semester. Prof. Rohrbacher.

204 Advanced Sight Singing and Ear Training

1 credit. A continuation of Music 203. *Prerequisite:* Music 203 or *permission of instructor; corequisite:* Music 202. Spring semester. Prof. Rohrbacher.

205* Music of Non-Western Cultures

3 credits. (Foreign Cultures and International Studies) Contemporary music indigenous to eight non-Western geographic regions of the world are studied and compared in terms of tonal and rhythmic attributes, and as an approach to promoting socio-cultural awareness. *Prerequisite:* Required of Music majors; *permission of instructor for non-majors.* Spring semester. Prof. Rohrbacher.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. Spring semester. Prof. Douglas.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. Fall semester. Prof. Luckenbill.

235 History of Jazz

3 credits. (Old Core) Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, and viola in individual and class settings. Fall semester. Prof. Palmquist.

238 Intermediate String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching cello and double bass in individual and class settings. *Prerequisite: Music 237.* Spring semester. Prof. Palmquist. *(The department reserves the right to offer the class as private lessons if fewer than three students enroll.)*

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202-204, 269.* Fall semester. Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Provides students opportunities to develop skills in singing, song leading, listening, creating, and performing. Emphasizes applying knowledge and skills to provide musical experiences for young children and work with music specialists. Includes observation of music instruction and performance. Prof. Palmquist.

311 Music in the Elementary School

3 credits. Study of techniques, methods and materials used in teaching elementary music classes. Emphasizes performance, observation, assessment, and organization through observation, teaching, and participation in class music activities. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Palmquist.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experiences included. *Prerequisite: music major or permission of the instructor.* Spring semester. Prof. Kitchen.

321 Instrumental and Choral Conducting Fundamentals

3 credits. Instruction in the fundamentals of conducting. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Kitchen.

322 Instrumental and Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Prof. Stites.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and a study of string ensemble techniques, methods, and literature. *Prerequisite: Music 238.* Fall semester. Prof. Palmquist. *(The department reserves the right to offer this course as private lessons if fewer than three students are enrolled.)*

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. Fall semester. Prof. Hall-Gulati.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343.* Spring semester. Prof. Hall-Gulati.

353 Music Therapy Techniques

2 credits. The study of behavioral and music therapy techniques used in clinical practice, with emphasis on observation, assessment, program implementation, and accountability. *Prerequisite: Music 252.* Fall semester. Prof. Rohrbacher.

353L Music Therapy Techniques Laboratory

1 credit.

354 Music Research Methods

2 credits. Introduction to music research. Emphasis on reading, evaluating and applying research findings and on using research techniques in music therapy and music education. Includes the collection, codification, interpretation, and presentation of data. *Prerequisite: Psychology 105.* Spring semester. Prof. Palmquist.

371-380 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

415 Classical Romantic Music Literature

2 credits. **(Old Core)** Survey of instrumental and vocal music of the Classical and Romantic periods. *Prerequisite: Music 105 or permission of instructor.* Fall semester. Prof. Stites.

417 Twentieth Century Music Literature

2 credits. **(Old Core)** Survey of music from Impressionism to the present avant garde styles. *Prerequisite: Music 105 or permission of instructor.* (Not offered 1991-92). Prof. Harrison.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisite or corequisite: Music 202.* Spring semester. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. Credit for Music 431 is given only upon completion of Music 432. *Prerequisites: two semesters of Music 269.* Offered with sufficient enrollment. Prof. Seyler.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite: Music 431.* Prof. Seyler.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. Spring semester. *Prerequisites: Music 202, 204.* Profs. Kitchen, Douglas.

441 Music History and Literature I

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from antiquity until about the year 1700. Examples of great music will be ever present. *Prerequisite: Music 202 or permission of instructor.* Fall semester. Prof. Harrison.

442 Music History and Literature II

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from around the year 1700 through the 19th century. Examples of great music will be ever present. *Prerequisite: Music 202 or permission of instructor.* Spring semester. Prof. Harrison.

443 Music History and Literature III

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians of the 20th century. Examples of great music will be ever present. *Prerequisite:* Music 202 or permission of instructor. Spring semester. Prof. Harrison.

455 Music Therapy I: Principles

2 credits. A survey of literature on the nature and principles of music therapy, including theory, practice and research. The application of these principles according to specific client populations and preparation for clinical internship will be emphasized. *Prerequisites:* Music 252, 353, 354; or permission of instructor. Fall semester. Prof. Rohrbacher.

455L Music Therapy I Laboratory

1 credit.

456 Music Therapy II: Practices

2 credits. The study of philosophies and practices of disciplines as related to music therapy and the role of the music therapist as a treatment team member. Emphasis will be on the integration of the knowledge and skills associated with the practice of music therapy and issues related to professional employment. *Prerequisite:* Music 455 or permission of instructor. Spring semester. Prof. Rohrbacher.

456 Music Therapy II Laboratory

1 credit.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite:* permission of Department. Prof. Kitchen.

473-75 Practical Experiences I-III: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. A minimum of thirty hours for each clinical experience is required. Music therapy majors only. *Prerequisites:* Music 141, 151. Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite:* permission of instructor. Prof. Rohrbacher.

481-490 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, or research under faculty supervision. *Prerequisite:* permission of instructor. Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department office for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles.

Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; they may repeat the ensembles for credit. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director. Ensembles are graded P/NP.

MU 106 must be taken with ensembles or private lessons to fulfill the Creative Expression requirement in the Core curriculum.

268* Voice

1 credit. (Old Core) Profs. McKeel, Stites.

269* Piano

1 credit. (Old Core) Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Seyler.

270* Organ

1 credit. (Old Core) Prof. Schroeder.

271* Violin

1 credit. (Old Core) Prof. Palmquist.

272* Viola

1 credit. (Old Core) Prof. Palmquist.

273* Cello

1 credit. (Old Core) Prof. Milan.

274* String Bass

1 credit. (Old Core) Prof. Milan.

275* Guitar

1 credit. (Old Core) Prof. Cullen.

276* Flute

1 credit. (Old Core) Prof. Kirkpatrick.

277* Clarinet

1 credit. (Old Core) Profs. Hall-Gulati, Kitchen.

278* Oboe

1 credit. (Old Core) Staff.

279* Bassoon

1 credit. (Old Core) Staff.

280* Saxophone

1 credit. (Old Core) Profs. Hall-Gulati, Kitchen.

281* Trumpet/Cornet

1 credit. (Old Core) Prof. Webster.

282* French Horn

1 credit. (Old Core) Prof. Webster.

283* Trombone

1 credit. (Old Core) Prof. Moore.

284* Baritone/Euphonium

1 credit. (Old Core) Prof. Moore.

285* Tuba

1 credit. (Old Core) Prof. Moore.

286* Percussion

1 credit. (Old Core) Prof. Luckenbill.

360 Chamber Music

1/2 credit. (Old Core) General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Piano Trio, and Piano Ensemble will be formed as need arises.

361* Concert Choir

1 credit. **(Old Core)** Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Stites.

362 Choral Union

1/2 credit. **(Old Core)** Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. McKeel.

365* Orchestra

1 credit. **(Old Core)** Open to all qualified students; acceptance subject to approval by director. Presentation of several concerts during the year. String, chamber, and full orchestra music is performed. *Prerequisite for winds and percussion: permission of instructor.* Prof. Palmquist.

368 Jazz Lab

1/2 credit. **(Old Core)** The Jazz Lab offers small groups of students instruction in the basic skills of improvisation, stylization, and performance. The lab complements the jazz component of the Concert Band. (Not offered 1991-92).

369* Concert Band

1 credit. **(Old Core)** Open to all qualified students; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

105* Introduction to Theatre

3 credits. **(Cultural Heritage and Old Core)** Introduction to the various interrelated arts and disciplines that make up theatre performance and production, such as acting, playwriting, directing, and scene design. Emphasis is on history, literature, and theory, with support from a textbook, audio-visual aids, analysis of scripts, and possibly one or more field trips. Spring semester. Prof. Hunter.

155* Stagecraft and Lighting

3 credits. **(Creative Expression and Old Core)** Examination and application of theatre staging, design, and lighting. Topics include scenery design and construction, execution of technical effects, and theatre safety. Fall and Spring semester. Prof. Hunter.

165* Basic Acting

3 credits. **(Creative Expression and Old Core)** Theory and practice of the art and craft of the stage actor. Skills are developed in voice, body involvement, script analysis, style and theory. Students participate in projects requiring the memorization, creation, and presentation of scenes. Fall semester. Prof. Hunter.

French

See Department of Modern Languages, page 47.

German

See Department of Modern Languages, page 47.

Department of History

Professors Durnbaugh, K. Kreider, Mumford (*Chair*),
Ritsch, Vassady, Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 115 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts degree as a history major and receive certification in the social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

For a *minor in history*, the student must successfully complete 18 hours of course work, composed of the following courses: History 115, 201, 202, and three additional history courses. Students with specific career or personal interests are encouraged to discuss these with the department chair.

115* Modern European History

3 credits. **(Cultural Heritage and Old Core)** An examination of the major developments that have taken place in European history since 1500. A highly selective approach to long range developments and problems of our Western heritage. Staff.

201 History of the United States to 1877

3 credits. **(Old Core)** A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the earliest colonial settlements through the end of post-Civil War Reconstruction—roughly 1877. Fall semester. Profs. Mumford, Winpenny.

202 History of the United States since 1877

3 credits. **(Old Core)** A narrative account and analysis of the social, political, economic, and diplomatic forces that have shaped the American experience from the beginning of Reconstruction—roughly 1865—through the present. Spring semester. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. **(Old Core)** A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

215 English History to 1688

3 credits. **(Old Core)** Medieval England from the Anglo-Saxons to the Revolution of 1688, with emphasis on the constitutional and legal foundations, and the role of the Church. Fall semester. Prof. Poole.

216 English History since 1688

3 credits. **(Old Core)** Modern Britain from the Revolution of 1688 to Elizabeth II, with emphasis on the evolution of the parliamentary form of government and Britain's role as a world power. Spring semester. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. **(Old Core)** Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Fall semester, alternate years. Prof. Kreider.

218 Europe in the Twentieth Century

3 credits. **(Cultural Heritage and Old Core)** An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Spring semester, alternate years. Prof. Kreider.

220 History of Soviet Union

3 credits. **(Foreign Cultures and International Studies and Old Core)** A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Spring semester. Prof. Kreider.

221 History of Non-Violence

3 credits. **(Values and Choice and Old Core)** An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. Kreider.

306 Recent History of the United States

3 credits. **(Old Core)** An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. **(Old Core)** The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

308 Technology and American Society

3 credits. **(Old Core)** The impact of technology on the development of American society, and also the extent to which American values have shaped the technology. Focus is primarily on the 19th and 20th centuries— from the Age of Steam to the Space Age. Prof. Winpenny.

310 American Ethnic History

3 credits. **(Old Core)** A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. **(Old Core)** The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. **(Old Core)** Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

319 History of Tsarist Russia

3 credits. **(Old Core)** The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Fall semester. Prof. Kreider.

323 History of China

3 credits. **(Old Core)** A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

324 History of Japan

3 credits. **(Old Core)** A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

327 History of Africa

3 credits. **(Old Core)** A survey of African history and culture using an interdisciplinary approach, with emphasis on the history of the politics, cultures, arts, and societies of the African people. Prof. Vassady.

328 Modern Africa

3 credits. **(Old Core)** Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330-339 Studies in United States History

3 credits for each course. **(Old Core)** An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340-349 Minorities in United States History

3 credits for each course. **(Old Core)** An incisive view of minorities in a society venerating majoritarian rule: for example. Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff.

370-379 Special Topics

3 credits. **(Old Core)** Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. **(Old Core)** The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. **(Old Core)** A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Staff.

406 Social and Intellectual History of the United States

3 credits. **(Old Core)** An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Staff.

411 Greek and Roman History

3 credits. **(Old Core)** Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. *By special arrangement.* Staff.

412 Medieval History

3 credits. **(Old Core)** Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. *By special arrangement.* Staff.

480-489 Independent Study

Variable credit. **(Old Core)** Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites: approval of the department chair and the Provost, permission of instructor.* Staff.

498-499 History Seminar

3 credits. **(Old Core)** A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell, D. Koontz, Shubert (*Chair*)
Associate Professors R. Dolan, J. Koontz, Morse
Assistant Professors Polin, Sanchis

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

Some of these courses also satisfy the Core Program requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena,

problem solving strategies, and computational skills.

The department offers six concentrations. *The pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The *general mathematics concentration* is for those who want to design their own programs in mathematics.

In addition to the major, the department offers a choice of two minors: *in statistics and in mathematics*. Each is developed on a common foundation of twelve hours of calculus and three hours of linear algebra. The *minor in statistics* is designed to provide training specifically in this field, while the *minor in mathematics* allows the student the flexibility of course selection.

In addition to Mathematics 121, 122, 222, and 201, the minor requirements are as follows:

For statistics, Mathematics 151, 351, and either 252 or 352.

For mathematics, three courses above Mathematics 222.

All mathematics majors are required to take a minimum of 39 hours in mathematics courses, including Mathematics 121, 122, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112 or above, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 222).

The pure mathematics concentration requires Mathematics 301, 302, 421, 422, and two courses from other acceptable mathematics electives.

The secondary education concentration (required for secondary education certification) requires Mathematics 301, 341, 351, 421, two courses from other acceptable

mathematics electives, and Education 205, 230, 305, 415, and 473.

The actuarial science concentration requires Mathematics 331, 351, 352, 362, and 453; Accounting 105, 106; and Economics 101, 102. Also required is evidence of successful completion of at least one examination of the Society of Actuaries by February of the senior year. We strongly recommend the completion of more than one examination. The following courses contain material related to actuarial examinations: Math 121, 122, 222, 201, 331, 351, 352, 362, and 453

The statistics concentration requires Mathematics 252, 331, 351, 352, and 453.

The computer science concentration requires Mathematics 362, and four other acceptable mathematics electives, at least one of which must be 352 or 422; Computer Science 122, 221, 222, and one other 300- or 400-level computer science course other than 321. (These computer science courses also fulfill the modern language or computer skills requirement.)

The general mathematics concentration requires five acceptable mathematics electives, at least one of which must be 352 or 422.

011 Intermediate Algebra

2 credits. An accelerated review of the fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101, 117, 151, 211, and 212. *Credits are not applicable to the 125 required for graduation.* Fall semester. Staff.

101 Precalculus Mathematics

4 credits. (Old Core) A highly accelerated study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. If time permits, conic sections will also be studied. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency).* Fall semester. Prof. Polin.

105* Mathematics for Liberal Studies

3 credits. (Mathematical Analysis) An introduction to mathematical structures and applications designed to help students understand the historical and contemporary role of mathematics in human endeavors. Topics will be selected from a variety of areas such as logic, set theory, number systems, probability, graph theory, computer science, and matrix algebra. Topics may vary each semester. *Prerequisite: Mathematics 011 (Competency).* Staff.

117 Concepts of Calculus

4 credits. (Old Core) Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency).* Staff.

121* Calculus I

4 credits. (Mathematical Analysis and Old Core) The concepts, theory, and techniques of the differential and integral calculus of algebraic and trigonometric functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency).* Staff.

122 Calculus II

4 credits. (Old Core) A continuation of Ma 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry, sequences and series are included, and an in-depth study of integration is completed. *Prerequisite: Mathematics 121.* Staff.

151* Probability and Statistics

3 credits. (Mathematical Analysis and Old Core) The basic principles of probability, distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and methodology, and their relation to everyday life. *Prerequisite: Mathematics 011 (competency).* Staff.

201 Linear Algebra

3 credits. (Old Core) A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, eigenvectors and linear transformations. Students will be expected to create mathematical proofs. *Prerequisite: Mathematics 121.* Prof. J. Koontz.

205 Mathematics for Elementary Teachers

3 credits. (Old Core) Provides a foundation in knowledge of mathematics essential for teaching in the elementary schools. Topics include number systems, geometry of measurement, coordinate geometry, three dimensional geometry, the metric system, functions, probability and statistics. The course will address content preparation for elementary teachers as suggested by the National Council of Teachers of Mathematics. *Prerequisite: Math 105. This course may be used to satisfy Math 212 for students under the Old Core requirements.* Staff.

222 Calculus III

4 credits. A continuation of Math 122, completing the topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. (Old Core) Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. Fall semester. Prof. Morse.

252 Statistical Methods

3 credits. (Old Core) A continuation of material presented in Math 151. Statistical techniques are presented for solving a variety of problems arising in business, the social, physical and life sciences. Topics include simple and multiple regression, model building, analysis of count data, nonparametric statistics, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Abstract Algebra I

3 credits. A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201.* Fall semester. Prof. Sanchis.

302 Abstract Algebra II

3 credits. A continuation of Abstract Algebra I involving a more in-depth study of the structures introduced in Ma 301 and abstract vector spaces. Emphasis will be on the development of skills in proof construction and interpretation of abstract concepts. *Prerequisite: Mathematics 301.* Spring semester, odd-numbered years. Prof. Sanchis.

321 Differential Equations

3 credits. A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods are studied, including techniques for solving linear systems of differential equations. *Prerequisite: Mathematics 201, 222.* Spring semester. Prof. Polin.

324 Mathematical Models and Applications

3 credits. Survey of a number of mathematical topics and a variety of models in the social and life sciences. An introduction to the modeling process including problem identification, model construction, identification and collection of data, model validation, and calculation of solutions of the model. Problems provide motivation for the development of tools and techniques employed throughout applied mathematics: probability, theory, matrix algebra, optimization, and linear programming. Each student will be required to present a paper. *Prerequisites: Mathematics 201, 222.* Spring semester, even-numbered years. Prof. Morse.

331 Operations Research

3 credits. A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, integer programming, dynamic processing, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: Mathematics 151, 201.* Fall semester, even-numbered years. Prof. Shubert.

341 Modern Geometry

3 credits. (Old Core) The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall semester, odd-numbered years. Prof. J. Koontz.

351 Mathematical Statistics I

3 credits. A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's t, Snedecor's F, and normal distributions. *Prerequisite: Mathematics 222.* Fall semester. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. A continuation of MA 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 151, 201, 351.* Spring semester. Prof. Blaisdell.

362 Numerical Analysis

3 credits. A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in the sciences, including actuarial science. Topics include solutions of equations in one variable, numerical integration, polynomial approximation, solution of linear systems, and numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; Computer Science 121.* Fall semester, odd-numbered years. Prof. Polin.

370-379 Special Topics in Mathematics

Variable Credit. A study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, series of real numbers, limits and metric spaces, and continuity. *Prerequisites: Mathematics 201, 222.* Fall semester, odd-numbered years. Prof. D. Koontz.

422 Real Analysis II

3 credits. A continuation of Math 421, including such topics as integration, differentiation, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring semester, even-numbered years. Prof. D. Koontz.

453 Time Series Analysis

3 credits. A study of the theory and application of statistical methodology pertaining to the modeling of time series. Time domain ARIMA models are emphasized, and extensive use is made of statistical analysis software. *Co-requisite: Mathematics 352.* Spring semester, odd-numbered years. Prof. Blaisdell.

480-489 Independent Study

Variable credit. Staff.

Education 305 Practicum in Secondary Education

4 credits. *Prerequisite: Education 230.* Fall semester, even-numbered years. Prof. R. Dolan.

Department of Modern Languages

Associate Professors Daiga, Goodling
Assistant Professors Barnada, Trachte (*Chair*)

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture. The pragmatic virtues of a usable skill are joined with the humanistic values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by completing 30 credit hours in one language above 112. A minimum of 9 hours above 112 must be taken in residence at Elizabethtown College. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are also encouraged to participate in the Brethren College Abroad program.

Department majors must complete the following courses: in residence—Modern Language 211, 212, 311, and 323 or a 370 course, and a three credit independent study project (481-490). Majors must participate in the BCA program for one year and the courses taken must include advanced conversation and composition, phonetics, French/German/Spanish history, and History of (French/German/Spanish) Literature for a minimum of 15 credits in the major. After completing the required course work, majors must take the oral proficiency interview and

receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are a minimum of 12 credits above Modern Language 112 in the following courses: Modern Language 211, 212, 311, and 323. A 312 or a 370 course may be substituted for a 323 if offered. The internship, Modern Language 318, is optional. After completing the required course work, students must take the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

A placement test is administered free of charge during summer orientation for freshmen. In addition, it is offered the first week of classes and in spring semester, prior to Fall pre-registration. It may be taken at any other time during the academic year for the general college fee of \$25. All students with more than one year of language preparation must take the placement test before registering in language courses for academic credit.

111 Fundamentals of Language and Culture I (French, German, Spanish)

5 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks.

112* Fundamentals of Language and Culture II (French, German, Spanish)

5 credits. **(Foreign Cultures and International Studies and Old Core)** Expansion of basic elements of structure and the phonetic system in culturally authentic contexts. Additional development of communicative competency in five skill areas: listening, speaking, writing, reading, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks. *Prerequisite: Modern Language 111 or placement by examination.*

211* Communication Through Language and Culture I (French, German, Spanish)

3 credits. **(Foreign Cultures and International Studies)** Emphasizes functional proficiency. A functional-notational syllabus expands use of linguistic tasks such as asking questions, stating facts, describing, narrating, and expressing feelings. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 112 or placement by examination.*

212* Communication Through Language and Culture II (French, German, Spanish)

3 credits. **(Foreign Cultures and International Studies)** Expanded use of linguistic functions. Introduction and development of more advanced tasks such as sustaining opinions, explaining, comparing, and hypothesizing. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 211 or placement by examination.*

311 Makings of Modern Society (French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena and issues which have shaped and continue to shape the modern nation. Courses are organized around a theme which may vary from year to year. Readings are taken from literary, sociological and political sources. Films, slides, and audio and videotapes supplement written materials. *Prerequisite: Modern Language 212 or permission of instructor.* Fall semester.

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: French 211 or permission of instructor.* Spring semester.

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Spanish 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. **(Old Core)** Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres.

371-380 Special Topics (French, German, Spanish, Russian)

3 credits. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability. *Prerequisite: Modern Language 212 or permission of instructor* (*Russian courses are offered if there is sufficient interest. Course 371 provides a reading knowledge in the language.)

481-490 Independent Readings (French, German, Spanish)

3 credits. For senior language majors. Independent projects in some area of language or literature.

Department of Occupational Therapy

Associate Professors Jones (*Chair*), Petersen
Assistant Professors Farley, Kasar, Kelly
Instructor Ferraro

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy has been accredited since 1976 by the American Occupational Therapy Association and the American Medical Association. The department was reaccredited in 1984.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a

comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 398, 402, 405, 407, 409, 410, 412, 421, 498; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; and Mathematics 151 and 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Fieldwork Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of fieldwork education. Students are responsible for their transportation and travel costs to and from assigned clerkship and fieldwork centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II fieldwork experience in the event these are not provided by the affiliated hospital or clinic.

The student may select either of the following options with faculty approval:

First Option: The student may complete three years of academic work followed by three months of Level-II fieldwork experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II fieldwork the next summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II fieldwork experience.

Specialty Fieldwork

After completing the required six months of Level-II fieldwork, the student may elect to complete specialty Level-II fieldwork. The clinical experience may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education .

Related Expenses

Additional expenses for the occupational therapy student normally include transportation to fieldwork sites, insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association. There are reduced rates for students.

National Certification Examination

Upon being awarded the bachelor's degree in occupational therapy and successful completion of Level-II fieldwork, the student is eligible to sit for the national certification examination, held twice a year, usually in July and January. The examination is conducted by the American Occupational Therapy Certification Board (AOTCB) which is responsible for awarding certification and the designation Occupational Therapist Registered (OTR).

Admission Requirements for the Department

1. Prior To Admission Into The Department:

- The student must submit an application with all supporting documentation to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. Transfers are permitted at the sophomore level only, on a space available basis.
- The student must have an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- Freshman Occupational Therapy majors are selected by the Occupational Therapy faculty. The selection process includes consideration of rank in high school class, SAT scores, interview, and knowledge of occupational therapy.
- The names of freshmen Occupational Therapy students selected for the next academic year are submitted to the Director of Admissions.
- The Department of Occupational Therapy requires that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a physical or emotional problem arise which the Department feels may jeopardize the student's participation in the program .

2. Evaluation After Admission Into The Department:

- Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:
 - (1) Have at least a 2.5 average in all courses required for the major (both occupational therapy

and related requirements) at the end of the sophomore year.

(2) Obtain grades of at least C or better in OT 303, 316, 402 and 405.

(3) Satisfactorily meet the standards and requirements in all phases of fieldwork education including Level-I fieldwork, laboratory, and Level-II fieldwork experience.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for nonmajors is required.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for non-majors is required.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected activities, fine motor and product oriented as well as games and gross motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors is required.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors is required.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy with emphasis on normal and abnormal movement. Measurement techniques for range of motion and muscle testing are presented. Concepts are integrated in lab experiences. *Prerequisites: Biology 201; Occupational Therapy majors only.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, and collage. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth through Adolescence

3 credits. An examination of normal human development along the birth through adolescence segment of the developmental continuum. Emphasis is on sensorimotor development and occupational behaviors in the areas of exploration, play, self-care, educational, leisure, prevocational and social performance. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. The course format includes lecture, seminar, laboratory and Level I Fieldwork Experience. *Corequisite: Occupational Therapy 305. Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors is required.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors is required.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies, and professional reporting are coordinated with Level-I Fieldwork experience, lecture, laboratory, and seminar. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors is required.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester.

370-379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor required.*

398 Level II Fieldwork—Psychosocial Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of psychosocial rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum score on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Occupational Therapy majors only.* Summer term.

402 Geriatric Occupational Therapy

2 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as geriatric occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Occupational Therapy majors only.* Spring semester.

405 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approaches used to enhance the function of individuals with major physical disabilities. Lecture, laboratory, seminar, and Level-I Fieldwork experience. *Prerequisite: Occupational Therapy 218; Corequisite: Course leading to CPR certification and Occupational Therapy 407. Occupational Therapy majors only.* Fall semester.

407 Physical Pathology

2 credits. Medical lectures relative to the etiology, prognosis and treatment of the major conditions resulting in physical disability. *Permission of the instructor for non-majors is required.* Fall semester.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. *Prerequisites: Mathematics 151, 252 suggested. Permission of the instructor for non-majors is required.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the management, supervisory functions of administering an occupational therapy department in traditional and nontraditional settings. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, program evaluation, and legal and ethical issues. *Occupational Therapy majors only.* Spring semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. Other topics including grant writing, publishing, literature critique, and data analysis. *Prerequisite: Occupational Therapy 409. Occupational Therapy majors only.* Spring semester.

414 Advanced Senior Practicum Research

Variable credit. Taken in conjunction with Occupational Therapy 412, Senior Practicum; for students who desire to participate in developing and implementing a data based research project to be conducted either on campus or at a nearby clinical facility.

420 Sensory Integration

1 credit. Introduction to study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite: Biology 201.* Occupational Therapy majors only. Fall semester.

422 Kinesiology II

2 credits. Advanced concepts of physical rehabilitation including theory bases of Bobath, PNF, Rood, and Brunnstrom. Joint mobilization principles for the treatment of pain and stiffness also included. *Occupational Therapy majors only.* Spring semester.

424 Occupational Therapy in Schools

1 credit. Examination of the school system as a setting for occupational therapy services. Topics will include federal legislation, multi-disciplinary collaboration, roles and functions of occupational therapists, and characteristics which differentiate the school system from other areas of OT practice. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring Semester.

471 Level II Fieldwork—Physical Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of physical rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum score on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Prerequisites: All academic course work and Occupational Therapy 398. Occupational Therapy majors only.* Summer or fall semester.

479 Level II Fieldwork – Specialty

No credit. Variable length of Level II Fieldwork experience in area of student's interest. Arranged on an availability basis. *Prerequisites: Occupational Therapy 398 and 471. Occupational Therapy majors only.* Fall semester.

481-488 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

Department of Philosophy

Professors Spiegler, Sutphin (*Chair*)
Associate Professor Matteo

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different

intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A major in philosophy requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. The following seven courses are required: Philosophy 105, 115, 180, 201, 240, 310, and 490, the Senior Thesis. In addition, the student must elect two from the following: Philosophy 302, 313, 320. The remaining three hours may be taken from any of the other offerings in the department.

A minor in philosophy requires six courses in Philosophy, with the following distribution: Philosophy 105, 110 or 180, 115, 201, and either 240 or 310. An additional three hours must be selected from the following: Philosophy 240, 302, 310, 313, or 320.

105* Introduction to Philosophy

3 credits. **(Cultural Heritage and Old Core)** An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Prof. Sutphin.

110* Logic and Critical Thinking

3 credits. **(Power of Language)** A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and truth. The nature of inference from premises to conclusion, rules for deductive and inductive process; informal inferences and fallacies, and theory of definition. Prof. Sutphin.

115* Ethics

3 credits. **(Values and Choice and Old Core)** A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo.

170-79 Special Topics in Philosophy

3 credits. Courses of an experimental nature offered at the Freshman and Sophomore level. Staff.

180* Symbolic Logic

3 credits. **(Mathematical Analysis)** Studies the methods of such formal rational procedures as syllogistic, propositional, quantificational, and modal logic, and the informal procedures of inductive reasoning, meaning and definitions, and informal topics including fallacies. Prof. Sutphin.

201* Ancient and Medieval Philosophy

3 credits. **(Cultural Heritage and Old Core)** An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Prof. Sutphin.

240 Modern Philosophy

3 credits. **(Old Core)** A study of enduring issues in the writings of the 17th and 18th century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. **(Old Core)** A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. **(Old Core)** The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Spiegler.

310 Contemporary Philosophy

3 credits. **(Old Core)** A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Prof. Sutphin.

313 Philosophy of Science

3 credits. **(Old Core)** An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Prof. Sutphin.

320 Philosophy of Religion

3 credits. **(Old Core)** A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Prof. Sutphin.

370-79 Special Topics in Philosophy

3 credits. **(Old Core)** A constantly changing specialized study within the field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480-89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Department of Physical Education and Health

Associate Professor Ober (*Chair and Athletic Director*),
Kauffman

Assistant Professor Whitmore

Staff: Drazkowski, Roderick, Schlosser

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social and moral standards, such as sportsmanship, teamwork, tolerance, and other character traits which come from properly conducted play.

All students are required to take three semester hours of physical well being courses, of which at least two must be activity courses. They may be satisfied by any of the courses offered in the Department of Physical Education, except PE 285. No more than five (5) credits of physical well being courses may be counted toward the graduation requirement.

105* Swimming

1 credit. (Physical Well Being and Old Core) Instruction in the basic strokes, survival swimming, and water safety.

115* Physical Fitness and Wellness

1 credit. (Physical Well Being and Old Core) Instruction in cardiovascular-type activities, strength, flexibility, weight control, nutrition, myths, physical activity, injury prevention and rehabilitation, safety, fitness equipment, stress, relaxation, games, exercises, and the consumer-personalizing fitness, aerobic exercises.

118 Water Safety Instruction

1 credit. (Old Core)

120* Aerobics

1 credit. (Physical Well Being and Old Core)

125* Tennis

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

130 Bicycling

1 credit. (Old Core)

140* Bowling

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

145* Field Hockey/Volleyball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

146* Racquetball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

150* Volleyball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

161-163* Adapted Physical Education

1 credit. (Physical Well Being and Old Core) Individual activity or collective exercise adapted to needs and abilities of the student.

165* Golf/Badminton

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

175* Archery/Badminton

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

181-184 Self-directed Physical Education Activity

1 credit. (Old Core) For the student who attends Evening Division, studies abroad, or has extenuating circumstances which prohibits the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

185* Basketball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

190* Horsemanship

1 credit. (Physical Well Being and Old Core) Basic riding positions, balance, equine safety. Discuss equine behavior, care, tack, styles, and management.

194* Skiing

1 credit. (Physical Well Being and Old Core)

195* Soccer

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades. *Required of Elementary Education and Early Childhood Education majors.*

Department of Physics

Professor Ranck

Associate Professors Leap, Thompson

Assistant Professors Ferruzza (*Acting Chair*), Gaffney,
Stuckey

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in science and technical fields. In accord with the philosophy that both majors and nonmajors should be

broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, all intended to cultivate an ability for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in the department commonly go on to graduate school or to careers in physics, engineering, computer technology, or education.

Programs in Physics

Programs in physics lead to the B.S. degree. The **physics major** is preparation either for graduate school or for the technical job market. The **engineering physics major** is a practical program designed to lead to a technical career in industry. The **chemical physics major** combines study in the fields of physics and chemistry. The **secondary education major in physics**, offered in conjunction with the Education Department, leads to Pennsylvania teacher certification at the secondary level.

Programs in Engineering

Engineering majors in the 3/2 program study for three years at Elizabethtown College and two years at The Pennsylvania State University. Upon completion of the program, the B.A. degree is awarded by Elizabethtown College and the B.S. degree by The Pennsylvania State University. Engineering students in the 3/2 program who maintain a 3.0 cumulative average at Elizabethtown College are guaranteed admission to the College of Engineering at The Pennsylvania State University.

The Elizabethtown College four-year engineering programs, which lead to the B.S. degree, are preparation for technical careers in industry. The **computer engineering major** combines studies of engineering and computer technology, including both hardware and software. The **industrial engineering major** combines engineering physics with business administration.

Physics majors are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 421, 422, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 and 113; and Computer Science 115.

Engineering physics majors are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 361, and either 242 or 262; Mathematics 121, 122, 201, 222, and 321; Engineering 118; Computer Science 115; Chemistry 105 and 113; and Economics 101.

Chemical Physics majors are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 421, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Computer Science 115; and Chemistry 113, 114, 344, and 352.

Secondary education majors in physics are required to take Physics 101, 102, 202, 221, 221L, 241, 242, and 321; Mathematics 121 and 122; Chemistry 105 and 113; and Computer Science 115.

At Elizabethtown College, **engineering students in the 3/2 program** are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 361, and either 242 or 262; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 and 113; Computer Science 115; Engineering 118; and Economics 101.

Computer engineering majors are required to take Physics 101, 102, 202, 221, 221L, 241, 242, 301, 302, 321, 351, and 361; Mathematics 121, 122, 201, 222, and 321; Computer Science 121, 122, 221, 222, and 332; Engineering 118; Chemistry 113; and Economics 101.

Industrial engineering majors are required to take Physics 101, 102, 202, 241, 321, 361, and either 242 or 262; Engineering 118 and 411; Mathematics 121, 122, 151, 201, and 222; Accounting 305; Computer Science 115; Chemistry 105 and 113; Economics 101 and 102; Business Administration 265, 369, 466, and either 330 or 468; either Business Administration 248 or Mathematics 331; English 382 or 383; and Psychology 105.

Minors in physics are required to take Physics 101, 102, 202, 221, 221L, and six additional credits in physics.

101* Physics I

4 credits. **(The Natural World and Old Core)** Introduction to the basic concepts of mechanics, classical kinematics and dynamics (linear and rotational motion, force and torque, energy), friction, statics, fluids, kinetic theory of matter. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite or Corequisite: Mathematics 117.* Fall semester. Prof. Ferruzza.

102 Physics II

4 credits. **(Old Core)** A continuation of Physics 101. Introduction to the basic concepts of electricity, magnetism, geometrical optics, interference and diffraction, and brief introductions to relativity, quantum theory, atomic and nuclear physics, and elementary particle physics. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

113* Spacetime Physics

4 credits. **(The Natural World and Old Core)** A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114* Cosmology

3 credits. **(The Natural World)** A study of the origins, evolution, and future of the universe. *Prerequisite: High school algebra and trigonometry.* Spring semester. Freshman Seminar in fall. Prof. Stuckey.

202 Physics III

4 credits. **(Old Core)** An introduction to special relativity and mathematical methods for physicists and engineers. Special relativity topics include time dilation, length contraction and the energy content of matter. Mathematical techniques involved in describing physical phenomena such as waves and energy transfer are studied. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 102; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Stuckey.

216* Quantum Theory and Reality

3 credits. **(The Natural World and Old Core)** A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Spring semester. Prof. Ranck.

221 Modern Physics (Chemistry 343)

3 credits. **(Old Core)** Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

221L Modern Physics Laboratory

2 credits. Experiments relating to the atomic nature of matter and the interaction of radiation with matter. Introduction to special computational techniques appropriate for the experiments. *Corequisite: Physics 221 or Chemistry 343.* Fall Semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Prof. Rutter.

242 Computer Systems Interfacing (Computer Science 333)

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. [Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

262 Statics & Dynamics

3 credits. Equilibria of particles and rigid bodies subject to concentrated and distributed forces, with practical applications to mechanical systems. Topics include unbalanced forces, work and energy, and impulse and momentum. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

301 Mechanics

3 credits. **(Old Core)** An intermediate course in mechanics. Newtonian mechanics of systems of particles, central forces, oscillations, collisions, rigid-body dynamics, and the Lagrangian and Hamiltonian formalisms for generalized coordinates. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, 321.* Fall semester. Prof. Gaffney.

302 Electromagnetism

3 credits. **(Old Core)** An intermediate course in electromagnetism, including electro- and magnetostatics and dynamics, Maxwell's equations, macroscopic fields, electromagnetic waves, and special relativity. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Prof. Gaffney.

321 Thermal and Statistical Physics

3 credits. **(Old Core)** The principles of thermodynamics, including variables and equations of state, the laws of thermodynamics, heat engines, phase transitions, blackbody radiation, heat transfer, and kinetic theory. *Prerequisite: Physics 102.* Fall Semester. Prof. Ferruzza.

351 Advanced Physics Laboratory

2 credits. Advanced laboratory courses with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. A wide variety of experimental techniques and analyses are used. Individual experimental design is emphasized. Hours: laboratory 6. *Prerequisites: Physics 202, 221, 241.* Fall semester. Prof. Stuckey.

361 Engineering Practices Seminar

1 credit. Weekly presentations and discussions by students and faculty of practices, techniques, and topics in the engineering profession. *Prerequisite: permission of instructor.* Fall semester. Prof. Ferruzza.

421, 422 Quantum Physics I, II

3 credits. **(Old Core)** Quantum theory, including the formalisms of Schrodinger, Heisenberg, and Dirac; the uncertainty principles; quantum solutions to problems in classical mechanics; spin-1/2 systems; scattering theory perturbation theory; atomic physics; Bose-Einstein and Fermi-Dirac statistics for many-particle systems; and the interaction of radiation with matter. *Prerequisites: Physics 221, 301, and 302.* Fall semester, spring semester. Prof. Gaffney.

423 General Relativity

3 credits. **(Old Core)** The theory of general relativity, including the Schwarzschild and Kerr-Newman black holes, the Robertson-Walker cosmology, weak fields and gravity waves. *Prerequisites: Mathematics 321, Physics 221 and 302 or permission of the instructor.* Fall semester, alternate years. Staff.

471-479 Topics in Physics

Variable credits. **(Old Core)** Topics in physics not covered in other courses. *Prerequisite: Permission of the instructor.* Alternating Fall and Spring semesters. Staff.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of the instructor.* Staff.

491, 492 Research I, II

3 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of the instructor.* Fall semester, Spring semester. Staff.

Earth Science

ES 105 Field Earth Science

8 credits. **(The Natural World and Old Core)** An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite: Permission of the instructor.* Summer session. Prof. Thompson.

ES 111* The Dynamic Earth

4 credits. **(The Natural World and Old Core)** An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity and geological time. Hours: lecture 3, laboratory 2. Fall semester, Spring semester. Prof. Thompson.

ES 112* The Geology of Landscape

4 credits. **(The Natural World and Old Core)** The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. Fall semester. Prof. Thompson.

ES 215* Meteorology

3 credits. **(The Natural World)** General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Standard weather maps are used. Fall and spring semesters. Prof. Thompson.

ES 370-379 Special Topics in Earth Science

Variable credits. **(Old Core)** Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite: Permission of the instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. **(Old Core)** Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite:* Permission of the instructor. Prof. Thompson.

Engineering

EGR 118 Engineering Methods & Graphics

3 credits. Introduction to engineering communication through graphics (projections, pictorials, dimensioning, working drawings, graphs, and spatial relationships). Instruction and practical exercises in computer graphics, including computer aided design (CAD). Hours: lecture 2, laboratory 6. Spring semester. Prof. Ferruzza.

EGR 411 Work Measurement, Quality Assurance, and Human Factors

3 credits. Production management with emphasis on process improvement, work measurement, cost reduction, application of statistical techniques to quality assurance; and ergonomics. *Prerequisite:* Business Administration 248; *Co- or Prerequisite:* Business Administration 369. Fall semester. Prof. Ferruzza.

Department of Political Science

Professors Gottfried, Selcher (*Chair*)
Associate Professors McClellan, McDonald

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessperson. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 111, 112, 222, 245, 330, 351, and 361, Sociology 331, and twelve credits of political science electives. In addition, at least one semester of a modern foreign language at the 112 level or higher is

required. General electives from the other social sciences are encouraged.

For a minor in political science, the student must successfully complete 21 hours of course work, composed of the following political science courses: 111, 112, 222, 245, and 351 or 361, and two elective 300/400-level courses. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/public relations: Political Science 318, 323; (2) law/paralegal/criminal justice: Political Science 311, 326; (3) international affairs: Political Science 345, 352, 353, 444; (4) political theory: Political Science 324, 326; (5) public administration: Political Science 471; and (6) business administration: Political Science 366.

Students majoring in political science may elect a *concentration in public administration*. This includes Political Science 471; Business Administration 376 (Decision-Making in the Public Sector); Economics 101; and Sociology 360. Students not majoring in political science may choose a minor in public administration, and should consult the interdisciplinary section of this catalog for further information.

The Department participates in the *secondary school certification in social studies program and the forestry and environmental management major*, offering a political science concentration in each. (See the detailed descriptions in the interdisciplinary section of this catalog.)

105* Western Political Heritage

3 credits. **(Value and Choice and Old Core)** An introduction to the major political thinkers of the Western political tradition from Plato to Lenin. Justice, equality, rights, freedom, order and community are among some of the ideas to be examined from a variety of critical and historical perspectives. Prof. McDonald.

111* American National Government

3 credits. **(The Social World and Old Core)** Analysis of the development of the U.S. Constitution, the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Prof. McClellan.

112 State and Local Government

3 credits. **(Old Core)** Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Spring semester. Prof. McClellan.

222 Political Theory

3 credits. **(Old Core)** Analysis of the development of significant political ideas from the Greek city-state to the present. Spring semester. Prof. McDonald.

245* International Relations

3 credits. **(Foreign Cultures and International Studies and Old Core)** Survey of the basic units of analysis, concepts, and principles of global international relations, with emphasis on the formulation and implementation of foreign policy in the context of political, economic, military, and cultural factors. Prof. Selcher.

311 Constitutional Law

3 credits. **(Old Core)** History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Prof. Gliptis.

313 The American Presidency

3 credits. **(Old Core)** An examination of the development of the modern presidency as institution, symbol, and policy-maker. Topics to be covered include the nature of presidential power, the institutional presidency, relations with the public and governmental institutions in the U.S., and policy leadership in foreign and domestic affairs. Prof. McClellan.

316 The American Electoral Process (Campaign '92)

3 credits. **(Old Core)** Analysis of the process of recruiting, nominating, and electing candidates for national office in the U.S., the major participants in national elections, and the impact of elections on public policy-making. Prof. McClellan.

318 Mass Media and American Politics

3 credits. **(Old Core)** Analysis of the role and influence of the mass media in American politics, emphasizing the development of the media industry and its relations with government, the political communications process, and the impact of the media on public opinion, elections, and public policy-making. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. **(Old Core)** An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects for nuclear war are among some of the topics examined. Prof. McDonald.

324 Modern Ideologies

3 credits. **(Old Core)** A survey of Marxism, socialism, anarchism, liberalism and conservatism, and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

326 American Political Thought

3 credits. **(Old Core)** Historical analysis of major American political thinkers from the Puritans to the present with special consideration given to the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. Prof. Kraybill.

345 American Foreign Policy

3 credits. **(Old Core)** U.S. foreign relations since World War II, within an integrated analytical approach to identify the characteristic processes of decision-making and the patterns of those decisions over the decades. Prof. Selcher.

351 Comparative Governments

3 credits. **(Old Core)** A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

352 Latin/American Politics

3 credits. **(Old Core)** Political culture and processes, with country studies and development models to illustrate political styles and approaches to current issues. Spring semester. Prof. Selcher.

353 Politics of Developing Nations

3 credits. **(Old Core)** An interdisciplinary analysis of issues of political development, with application to specific case studies of contemporary nation-building in transitional societies. Prof. Selcher.

1991-92 Academic Program

361 Public Administration

3 credits. **(Old Core)** A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

366 Government and Business

3 credits. **(Old Core)** An examination of relations between the public and private sectors, and of specific public policies toward business such as antitrust, economic and social regulation, and trade. Prof. McClellan.

370-379 Special Topics

3 credits. **(Old Core)** Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

444 U.S. Security Policy

3 credits. **(Old Core)** Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite: Political Science 245 or 345 or permission of instructor.* Prof. McDonald.

471 Capital Semester Internship

6 credits. Applied field experience in politics and public administration for state or local government agencies, the state legislature, and private political organizations. *Prerequisites: Political Science 361 and permission of instructor.* Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Professor Ellsworth (*Chair*)

Associate Professors Dennis, Eiserer, Teske

Assistant Professor Rider

Bachelor of Arts

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers the Bachelor of Arts degree. The department also offers a minor in psychology and a concentration for students pursuing the secondary education certification in social studies. See the interdisciplinary section of this catalog.

Courses required for the *bachelor of arts* degree are Psychology 105, 106, 213, 218, 222, 225 and 425 or 235 and 435, 317, 321, 402, and 413 or 414.

Courses required for *the minor* are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/ 400) courses. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

105* General Psychology

3 credits. **(The Social World and Old Core)** An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. **(Old Core)** The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105. Spring semester. Prof. Ellsworth.

108* Health Psychology

2 credits. **(Physical Well Being-non activity)** A study of the mind-body relationship and behavioral factors in headaches, cardiovascular disorders, cancer, and stress-related illness. Techniques for managing stress and pain are presented. Students undergo training in behavioral techniques, as well as a self-evaluation of life styles as related to health. Factors affecting compliance with health regimens are discussed. Training may include biofeedback, progressive relaxation, slow-chest breathing, autogenic suggestion, and other similar techniques. Evenings. Staff.

201 Addictions

1 credit. The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite:* Psychology 105 or permission of the instructor. Prof. Overdurf.

213 Research Methods

4 credits. **(Old Core)** The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105 Fall semester. Prof. Ellsworth.

218 Psychological Statistics

3 credits. Statistics in psychology, including percentiles, standard scores, t-tests, analysis of variance, correlation, regression and prediction, Chi square and other selected procedures. Emphasizes statistical reasoning, as well as application to psychological contexts. *Prerequisite:* Psychology 213. Spring semester. Prof. Ellsworth.

222 Physiological Psychology

3 credits. **(Old Core)** Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite:* Psychology 105. Spring semester. Prof. Eiserer.

225 Developmental Psychology

3 credits. **(Old Core)** Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite:* Psychology 105. Prof. Rider.

235 Social Psychology

3 credits. **(Old Core)** The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as self-perception, impression formation, attitudes, social influence, aggression, relationships, inter-personal communication, and environmental transaction. *Prerequisite:* Psychology 105. Prof. Teske.

237* Psychology of Women

3 credits. A psychological approach to understanding both the behavior of women and the female experience. Topics include development across the lifespan; language; victimization; sexuality; mental health; and stereotype-based conflicts. Guest speakers discuss special topics. Students receive experience in methods of behavioral study and also engage in self-evaluation of gender-related lifestyles and values.

252 Psychology of Music

2 credits. Study of acoustics and the Psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite:* music major or permission of instructor Spring semester.

317 Learning

4 credits. **(Old Core)** Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 213. Fall semester. Prof. Eiserer.

321 Theories of Personality

3 credits. **(Old Core)** A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite:* Psychology 105 and permission of the instructor. Fall semester. Prof. Teske.

322 Abnormal Psychology

3 credits. **(Old Core)** A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite:* Psychology 105. Spring semester. Prof. Dennis.

333 Tests and Measurements

3 credits. A study of the theoretical and practical considerations of evaluation and psychological measurement. Emphasis is on test construction and interpretation. *Prerequisite:* Psychology 105. Fall semester. Staff.

334 Exceptional Children and Youth

3 credits. **(Old Core)** A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite:* Psychology 225 or permission of instructor. Spring semester. Prof. Rider.

370-379 Special Topics

Variable credit. **(Old Core)** Study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite:* permission of instructor. Staff.

401 Counselling Psychology

3 credits. **(Old Core)** An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites:* Psychology 105 and permission of instructor. Fall semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. **(Old Core)** A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite:* Psychology 105. Fall semester. Prof. Dennis.

413 Perception

3 credits. **(Old Core)** A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of the instructor. Spring semester 1993. Prof. Eiserer.

414 Memory and Thinking

3 credits. **(Old Core)** A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 or permission of the instructor.* Spring semester 1992. Prof. Ellsworth.

425 Advanced Development Psychology

3 credits. **(Old Core)** A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project. *Prerequisites: Psychology 213, 225, and junior standing, or permission of the instructor.* Fall semester 1993. Prof. Rider.

435 Advanced Social Psychology

3 credits. **(Old Core)** A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites: Psychology 213 and 235 or permission of instructor.* Fall semester 1992. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites: Psychology 105 and permission of instructor.* Prof. Dennis.

480-489 Independent Study

Variable credit. **(Old Core)** This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite: permission of instructor.* Staff.

491-492 Research Practicum

Variable credit. **(Old Core)** Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites: Psychology 213 and permission of instructor.* Staff.

Department of Religious Studies

Professors: Clemens, Durnbaugh, Kraybill,
Puffenberger (*Chair*)
Associate Professor Crocker
Assistant Professor Bucher

Bachelor of Arts

The Department of Religious Studies seeks to broaden the student's liberal education by pursuing creative ventures which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a pluralistic religious milieu. Because of this diversity, the study of religion includes a

variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religious Studies major is designed to serve as a preprofessional foundation for those students wishing to pursue study beyond the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields). The student plans a major in consultation with the department faculty and chair to assure a balanced blend of courses in several subject areas.

A *major* in Religious Studies consists of twelve courses (36 hours) which includes the three-hour Senior Research Project/Thesis. The program of study must include at least one course from each of the following four categories: biblical studies, ethics and theology, comparative religions, and peace studies. The Department of Religious Studies requires the study of a modern foreign language at the college level for one full year. Any student planning to pursue graduate work should also take Greek and/or Hebrew.

A *minor* in Religious Studies consists of six courses (18 hours). One's selection must include at least three of the above listed categories.

See Interdisciplinary Programs for the details of the minor programs in "Peace and Conflict Studies" and "Anabaptist and Pietist Studies."

101* The Religious Literature of Ancient Israel

3 credits. **(Cultural Heritage and Old Core)** An introduction to the literature of ancient Israel (i.e., the Jewish Tanakh/Christian Old Testament), focusing on developing skills of historical-critical exegesis. Prof. Bucher.

102* The Religious Literature of Early Christianity

3 credits. **(Cultural Heritage and Old Core)** An introduction to the literature of early Christianity, primarily that found in the New Testament. The course focuses on the development of the skills of historical-critical exegesis. Prof. Bucher.

105* Forms of Religious Experience

3 credits. **(Value and Choice and Old Core)** A survey of the basic categories needed for an understanding of religious phenomena. Attention given both to formal expressions and substantive experiencing, with emphasis upon mystical intuition. Myth, symbol, and imagery is of special interest. Prof. Clemens.

165* Introduction to Peace and Conflict Resolution

3 credits. **(Value and Choice and Old Core)** The foundation course in the peace studies minor. Investigates causes of conflict and alternate modes of resolution, including mediation. Prof. Clemens.

170-179 Special Topics in Religion

3 credits. **(Old Core)** Courses of an experimental nature offered occasionally at the freshman-sophomore level. Includes such topics as: The Social World of Ancient Israel, The Social World of Early Christianity, etc. Staff.

201 Ancient Near Eastern Religions

3 credits. **(Old Core)** Introduces the major religious traditions of the ancient Near East: the religions of the Sumerians, Babylonians, Assyrians, Canaanites, Israelites, and Egyptians. It examines the theology, worldview, and religious practices of each of these traditions. Prof. Bucher.

202 Archaeology and the Bible

3 credits. **(Old Core)** Introduces the basic principles, techniques, and theoretical assumptions of archaeology as practiced in the Middle East. Surveys the major archaeological discoveries that have shed light on the Bible and biblical history. *Prerequisite: permission of the instructor.* Prof. Bucher.

205 Contemporary Religious Issues

3 credits. **(Old Core)** A survey of relevant problems and issues on the contemporary American religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism in America. Staff.

213* Religion and Gender

3 credits. **(Values and Choice and Old Core)** Introduces students to contemporary theological discussions originating with feminist critiques of religion. Examines the way in which an androcentric perspective has influenced religious language, beliefs, and practices.

215* Social Ethics

3 credits. **(Values and Choice and Old Core)** The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens.

221 Western Religions

3 credits. **(Old Core)** An introduction to the major religious traditions of the Near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. **(Old Core)** An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shintoism. Prof. Puffenberger.

225 Anabaptist and Pietist Movements

3 credits. **(Old Core)** A study of the European historical and theological backgrounds of the Anabaptist and Pietist movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Prof. Durnbaugh.

230 Religion in America

3 credits. **(Old Core)** Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, as well as the identity and integrity of each separate tradition. Prof. Clemens.

255 Business Ethics

3 credits. **(Old Core)** A critical analysis of contemporary ethical dilemmas in the context of American business practice. Utilizes normative ethical theory, Kohlberg's model of moral development, and case study analyses as a way to clarify competing ethical principles and to evaluate differing ethical judgments. Prof. Puffenberger.

310 Biblical Perspectives on Peace and Justice

3 credits. **(Old Core)** An examination of the ways in which the values of peace and justice were understood and practiced in the ancient Israelite and early Christian communities. *Prerequisite: Rel 101 or 102 or permission of the instructor.* Prof. Bucher.

315 Issues in Death and Dying

3 credits. **(Old Core)** A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. Presupposes the notion that the best preparation for life is an in-depth study of its nonexistence. *Prerequisite: permission of the instructor.* Prof. Puffenberger.

317 Sociology of Religion (Sociology 317)

3 credits. **(Old Core)** An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

335 Renaissance and Reformation History (History 315)

3 credits. **(Old Core)** A study of the civilization of the Renaissance in Italy, with emphasis on Florence, Erasmus, and the Protestant Reformation of the sixteenth century. Prof. Durnbaugh.

351 Religion and Violence

3 credits. **(Old Core)** A study of the reasons for hatred and war as well as a survey of the tension between patriotism and faith as found in the traditional and quasi-religions of our day. Critically examines the ideas of just war, pacifism, non-violent resistance, etc. Prof. Puffenberger.

355 Bio-Ethics

3 credits. **(Old Core)** A critical examination of the ethical problems that arise in the practice of medicine and the pursuit of biological and medical research. Its case study approach wrestles with the task of determining not only how ethical principles apply, but how to order the principles when not all of them can be followed. Prof. Puffenberger.

357 The Church's Role in Social Change

3 credits. **(Old Core)** Combines historical and topical consideration of the church's posture toward the state and social change. An applied section views current tense situations in order to arrive at a tenable position on the church's role. Prof. Clemens.

361 Anabaptist and Pietist Groups to 1850 (Sociology 361)

3 credits. **(Old Core)** Introduces the spectrum of groups: Brethren, Mennonites, Amish, Inspirationalists, Moravians, The Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Notes their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival and revolution. Prof. Durnbaugh.

362 Anabaptist and Pietist Groups since 1850 (Sociology 362)

3 credits. **(Old Core)** Examines the processes of adaptation, schism, and withdrawal in these groups as they respond to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren, and Mennonite); defensive and accommodation processes; and contemporary religious expressions. Prof. Durnbaugh.

363 Pacifism Among Anabaptist and Pietist Groups (Sociology 363)

3 credits. **(Old Core)** Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government, the pacifist compromises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to civil rights and justice issues. Probes growing interdenominational and international peace discussions and cooperations in the 1980's. Prof. Durnbaugh.

364 Amish Society (Sociology 364)

3 credits. **(Old Core)** An introduction to the history, culture, and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society (Sociology 365)

3 credits. **(Old Core)** Beginning with a review of sociological theory on modernization, this course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience for the Anabaptist and Pietist Studies minor, this seminar's topics and groups will vary from year to year. *Prerequisite: permission of the instructor.* Prof. Kraybill.

370-379 Special Topics in Research

3 credits. **(Old Core)** Courses offered occasionally on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest. Includes such topics as: Liberation Theology; Evangelical Theology; Civil Religion; Esoteric Religions; Utopian Communities; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; Prophecy and Apocalyptic Thought; Wisdom Literature; Islamic Thought; Eastern Scriptures; Biblical Hebrew; New Testament Greek; Jesus and the Gospel Tradition; Mysticism; Psychology and Religion; etc. Staff.

465 Directed Research Project (for Peace Studies minors)

3 credits. A capstone seminar designed to integrate previous work and produce a major research paper. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religious Studies minors by special request. Staff.

490 Senior Research Project/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Social Work

Assistant Professors Bergel (*Chair*), L. Martin, McFarland

Bachelor of Arts

Social Work is a multi-faceted profession concerned with change both on an individual, community, and national level. Within the framework of a liberal arts tradition, Elizabethtown's social work program prepares the student for entry into professional social work practice. The program also prepares students to enter graduate school. The program is based on an understanding of generalist practice which allows the graduate to choose from a wide range of social service careers.

The *major* in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. The program is accredited by the Council on Social Work Education.

The program provides an extensive opportunity for field experience, beginning with the sophomore year. The major culminates with 600 hours of field instruction during the student's senior year. Field experiences are arranged to meet the student's individual interest. Field experiences include but are not limited to such areas as child welfare, corrections, mental health, rehabilitation, health care, schools, and aging.

The Social Work Major requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. Two reference rating forms completed by persons who know the applicant well and a short essay describing the applicant's interest in the field of social work.
3. Formal admittance to Elizabethtown College.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The *Social Work Major* requires the following courses: Biology 105, Sociology 101, 220, Psychology 105, Political Science 111, Economics 101, Mathematics 151, Modern Language 112, Social Work 151, 233, 240, 280, 330, 367, 368, 369, 401, 470, 471, and 498.

151* Social Welfare Issues in Contemporary Society

3 credits. **(The Social World)** The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Field trips to social service agencies. *Prerequisites: Sociology 101, Psychology 105.* Spring semester. Prof. Martin.

233* Human Behavior in the Social Environment

3 credits. **(The Social World)** A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Sociology 101, Psychology 105.* Fall semester. Prof. McFarland.

240 Basic Helping Processes

3 credits. Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

280 Rural & Urban Social Welfare Systems

3 credits. A comparison of urban and small town rural areas. The development and organization of rural and urban communities; their network of services designed to address community, family, and individual problems; community development and administration of social service programs. *Prerequisite: Social Work 151.* Spring semester, Prof. Bergel.

330 Methods of Social Work Research (Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or co-requisite: Mathematics 151.* Fall semester. Staff.

339 Human Sexuality

3 credits. A study of socio-sexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Prof. McFarland.

344 Aging: Social Response and Implications

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Prof. McFarland.

355 Women in Society

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Prof. Bergel.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Prof. Martin.

366 Addiction and Society

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 240.* Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367.* Spring semester. Staff.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. Spring semester. Prof. Martin.

371-380 Special Topics in Social Work

3 credit. Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social economic, and political systems. *Prerequisites: Political Science 111, Economics 101.* Fall semester. Prof. Martin.

470 Introductory Field Instruction

3 credits. Supervised field instruction for a least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. Fall semester. Prof. Martin.

471 Advanced Field Instruction

12 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner. *Prerequisite: permission of instructor; co-requisite: Social Work 498.* Spring semester. Prof. Martin.

481-490 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite: Social Work 470; co-requisite: Social Work 471.* Spring semester. Prof. Bergel.

Department of Sociology and Anthropology

Professor Kraybill

Associate Professor Lehr (*Chair*)

Assistant Professors Dorsten, Wheelersburg

Bachelor of Arts in Sociology-Anthropology

The program of this department provides for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social services, law, and business administration. Some move directly into careers in personnel work, social research, adult and juvenile probation, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers a major in sociology-anthropology that leads to a bachelor of arts degree. The department also offers a minor in sociology and a concentration in anthropology and Anabaptist and Pietist studies.

The major in sociology/anthropology emphasizes theoretical and applied approaches so that the student can

easily move into graduate programs or into career opportunities.

The department also participates in the secondary education certification in social studies offering sociology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A sociology-anthropology major requires Sociology 101, 202, 203, 330, 331, 364, 498 and Anthropology 201, 202, and 360 plus a minimum of two other courses in Sociology, Anthropology, or Anabaptist and Pietist Studies.

The Anabaptist and Pietist Studies Concentration (12 hours) requires Sociology 361, 362, 365, and 363 or 481.

The Anthropology Concentration (12 hours) requires Anthropology 101, 306, 308 and one elective Anthropology course.

The Sociology minor requires 18 hours of course work including Sociology 101, 202, 203, 330, and 331, and 3 credit hours of sociology electives.

Sociology

101* *Discovering Society*

3 credits. **(The Social World and Old Core)** An introductory course to the social world which presents an understanding of society and its impact on the individual. Using the sociological perspective, this course offers students an understanding of social reality, processes, and explanations. Staff.

202 *Sociological Theory*

3 credits. **(Old Core)** An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite: Sociology 101.* Staff.

203 *Social Organization*

3 credits. **(Old Core)** A thorough analysis of the culture, structure, and change of contemporary industrial societies. Specific topics include the rational and nonrational bases of industrial society, work and leisure, politics, structured inequality and social movements. *Prerequisite: Sociology 101.* Staff.

215 *Criminology*

3 credits. **(Old Core)** Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Alternate fall semesters. Staff.

220 *Race and Ethnic Relations*

3 credits. **(Old Core)** Study of racial and cultural minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Staff.

237 *Group Dynamics*

3 credits. **(Old Core)** A consideration of empirical research in group dynamics within the larger attempt to integrate a theoretical understanding of group dynamics with its experiential applications to everyday life. Staff.

301 *Social Issues*

3 credits. **(Old Core)** A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Staff.

305 *Marriage and the Family*

3 credits. **(Old Core)** A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 *Sociology of Religion*

3 credits. **(Old Core)** An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

330 *Methods of Social Research* (Political Science 330, Social Work 330)

3 credits. **(Old Core)** Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisite: Sociology 101.* Fall semester. Prof. Dorsten.

331 *Social Statistics*

3 credits. **(Old Core)** Application of the concepts, probability and statistics to particular statistical procedures used in social research and analysis. *Prerequisite: Sociology 330, Political Science 330 or Social Work 330.* Spring semester. Prof. Kraybill.

342 *Modern Corrections*

3 credits. **(Old Core)** An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Alternate spring semesters. Staff.

358 *Sociology of War and Peace*

3 credits. **(Old Core)** A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Prof. Kraybill.

360 *Organizations in Modern Society*

3 credits. **(Old Core)** An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Prof. Kraybill.

361 *Anabaptist and Pietist Groups Prior to 1850*

3 credits. **(Old Core)** Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Prof. Durnbaugh.

362 *Anabaptist and Pietist Groups Since 1850*

3 credits. **(Old Core)** Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Prof. Durnbaugh.

363 Pacifism among Anabaptist and Pietist Groups, 1525-1985

3 credits. **(Old Core)** Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government; the pacifist compromises of Moravians while protecting Indian converts; and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Fall semester. Prof. Durnbaugh.

364 Amish Society

3 credits. **(Old Core)** An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Fall semester. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society

3 credits. **(Old Core)** Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience, the course will be conducted as a seminar with the topics and groups varying by year. Spring semester. *Prerequisite: Permission of the instructor.* Prof. Kraybill.

371-379 Special Topics in Sociology

3 credits. Readings and discussion of topical areas of sociology. Topics may include, but not limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of the instructor.* Staff.

481-490 Independent Study in Sociology

Variable credit. **(Old Core)** Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of the instructor.* Staff.

498 Senior Seminar

3 credits. **(Old Core)** The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of the instructor.* Spring semester. Staff.

Anthropology

111* Understanding Human Cultures

3 credits. **(Foreign Cultures and International Studies and Old Core)** A comprehensive survey of the peoples and cultures of the world with special emphasis upon four interrelated cultural systems: knowledge, technology, social organization, and ideology. Staff.

201* Physical Anthropology

3 credits. **(Natural World and Old Core)** An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. Fall semester. Prof. Lehr.

202 Cultural Anthropology

3 credits. **(Old Core)** An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

306 Indians of North America

3 credits. **(Old Core)** A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Prof. Lehr.

307 Peoples and Cultures of Africa

3 credits. **(Old Core)** Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. **(Old Core)** Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. **(Old Core)** Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Wheelersburg.

371-380 Special Topics in Anthropology

3 credits. **(Old Core)** Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Staff.

Spanish

See Department of Modern Languages, page 47.

Theatre

See Department of Fine and Performing Arts, pages 38.

Interdisciplinary Programs

Premedical and Other Health Professions Programs

Paul Petersen and Martin O.L. Spangler (*Co-chairs, Health Professions Advisory Committee*)

Members: John A. Campbell, Jr., James L. Dively, Frederic E. Hoffman, Frank P. Polanowski, Zoe G. Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions schools and/or students. *The biology pre-medical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 18. A second route is the *bachelor of science degree* in biochemistry (see page 18). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown, he or she will follow a curriculum similar to that outlined below, with minor variations depending upon several factors, such as starting level in English and mathematics. After completion of the freshman year, students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Seven faculty members are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into schools of medicine; (2) to advise students on registration and preparation for medical school admissions tests; (3) to assist students in the preparation and submission of applications to medical schools; (4) to draft a composite

letter of evaluation and endorsement for worthy candidates and to forward this information to the appropriate medical school admissions committees; (5) to offer assistance in preparing for medical school interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical school placement for advising and administrative purposes.

The premedical student should introduce him or herself to the Health Professions Advisory Committee early in the freshman year and formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. Forms for this registration are available from Dr. Petersen. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during the spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During April of the junior year, the Committee will hold interviews with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. The Committee will also use information from the student's registration form and from letters of recommendation and endorsement that the student has solicited from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical school admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process him or herself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that premedical students notify the Committee of changes in status of their applications so

that the Committee can plan for this important stage of the admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

Representative First-Year Courses

Credits	Fall Semester
3	Freshman Seminar
4	Biology 111
4	Chemistry 113
3	Power of Language*
4	Mathematics 121**
Credits	Spring Semester
4	Biology 112
4	Chemistry 114
4	Foreign Cultures/International Studies**
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, cytogenetics, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education

core-biology major, and the pre-allied health courses. The student then spends, if accepted, two or more years at Thomas Jefferson University in Philadelphia. After completing sufficient credits so that the total with those earned at Elizabethtown College will be at least 125, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science degree in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

Students are not limited to Thomas Jefferson University programs. Other Allied Health programs at other institutions of higher education may be used by the student for transfer of credit back to Elizabethtown College. However, these programs need to be approved by the Biology department and by the Registrar prior to the transfer of credit.

For additional details, the student should confer with Dr. J. Robert Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a Bachelor of Science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's Core Program in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program requirements and earning at least 101 credits before transferring to Duke. The student spends at least two years at Duke's School of the Environment. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional two or three semesters, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of For-

estry Degree from Duke University is accredited by the Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews. To insure acceptance, an applicant's G.P.A. should be at least 3.2.

There are variations of the schedule herein described. For additional details, the student should confer with Prof. Ronald. L. Laughlin.

Majors must complete all Elizabethtown College Core Program requirements. Within the Core areas, the following courses should be taken:

Mathematical Analysis (three hours): Mathematics 151 or 121. If 151 is not taken for core, it is strongly recommended as an elective. If 121 is not taken for core, Math 117 will satisfy the calculus requirement, but not core.

Natural World (eight hours): Biology 111 and Chemistry 101.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313, 313L, 321; two courses from Biology 215-215L, 235, 331, 332, and 347; and Chemistry 105. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111 and 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 101, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political Science 111, 112, 361, 366, 471. Minor concentration recommendations are Political Science 361, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry* 101, 105; Physics* 101, 102; two courses from Earth Science 111, 112, 115; Mathematics 101 and 121, or 151 and 117 or 121; and Education 205, 230, 305, 415, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113 114, 213, 214; and eight hours from among Chemistry 116, 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology* 111, 112; two courses from Earth Science 111, 112, 115; Physics* 101, 102; Mathematics 101, 121, 122; and Education 205, 230, 305, 415, and 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 204, 221, 221L, 241; one additional course in physics or drawing; two courses from Biology* 105, 106, 108; Chemistry* 101, 105; two courses from Earth Science, 111, 112, 115; Mathematics 101, 121, 122; and Education 205, 230, 305, 415, and 473.

*Count towards **Natural World** Core Program requirement.

Satisfies one of the two courses for **Social World Core Program requirement.

For additional details the student should confer with Dr. Hoffman of the Biology department.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are:

Students must take one 24-hour major, and two courses in each of the four cognate areas. All students must take the professional education sequence Education 205, 230, 305, 415, and 473. Consultation with your advisor is suggested for appropriate courses in the subject matter areas.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics.

History: The 24-hour major must include History 115, 201, 202, 390, one European history course beyond 115; one non-United States, non-European history course, and six elective hours in history.

Political Science: The 24-hour major must include Political Science 111, 112, 222, 245, 330, 351, and six elective hours in political science.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 225, 235, 321, 322 and 370.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 202, 203, 330, Anthropology 202, and nine hours planned in consultation with and approved by the

social studies advisors in the Departments of Sociology and Education.

Anabaptist and Pietist Studies Minor

The interdisciplinary minor in Anabaptist and Pietist Studies consists of 18 credit hours. The curricular model incorporates three types of courses: a required introductory course (3 hours.); elective courses in a variety of disciplines (12 hours.); and a capstone seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

The introductory course (Rel 225) is designed to orient students to the European historical and theological roots of the Anabaptist and Pietist movements. The elective courses, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which draws on the resources of three academic disciplines. The *capstone course* (Rel/Soc 365) is a seminar experience which requires students to integrate and synthesize the insights from several disciplines in a major research writing project. At least two faculty members from differing academic disciplines will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. *Program advisor:* Dr. William V. Puffenberger.

Minor Requirements

- A. One *required* introductory course (3 hours.)
Rel 225 Anabaptist and Pietist Movements
- B. Four *elective* courses from the following list (12 hours.)
 - Rel 230 Religion in America
 - Rel 335/His 315 Renaissance and Reformation History
 - Rel 361/Soc 361 Anabaptist and Pietist Groups to 1850
 - Rel 362/Soc 362 Anabaptist and Pietist Groups since 1850
 - Rel 363/Soc 363 Pacifism Among Anabaptist and Pietist Groups
 - Rel 364/Soc 364 Amish Society
- C. One *required* capstone research seminar (3 hours.)
Rel 365/Soc 365 Anabaptist and Pietist Groups in Modern Society

Peace and Conflict Studies Minor

The interdisciplinary minor in Peace and Conflict Studies consists of 18 credit hours. The curricular model incorporates three types of courses: required introductory courses (6 hours.); elective courses in a variety of disciplines (9 hours.); and a capstone, integrative seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

In order to provide students with adequate conceptual tools and conciliation skills, the program of study is multidisciplinary in both method and instruction. The *introductory courses* orient students to basic concepts and approaches in Peace and Conflict Studies as well as the history of nonviolence. The *elective courses*, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which taps the analytic resources of various academic fields. The *capstone course elective* requires students to synthesize concepts and knowledge from several disciplines in order to address a research problem of practical or theoretical interest. At least two faculty members, representing different academic fields, will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. *Program advisor*: Dr. William V. Puffenberger.

Minor Requirements

- A. Two *required* introductory courses (6 hours.)
- | | |
|---------|---|
| Rel 165 | Introduction to Peace and Conflict Resolution |
| Hi 321 | History of Nonviolence |
- B. Three *elective* courses from the list below (9 hours.). No more than two elective courses shall be chosen from any one department. At least two of the elective courses must be taken outside the student's major department.
- | | |
|-------------|--|
| Com 301 | Interpersonal Communication |
| PS 245 | International Relations |
| PS 345 | American Foreign Policy |
| Psy 235 | Social Psychology |
| Rel 310 | Biblical Perspectives on Peace and Justice |
| Rel 351 | Religion and Violence |
| Rel 357 | The Church's Role in Social Change |
| Soc 350 | Sociology of War and Peace |
| Soc/Rel 363 | Pacifism Among Anabaptist and Pietist Groups |

C. A required *capstone* seminar designed to integrate previous work and culminate in a major research paper.

Rel 465

Directed Research Project

International Studies Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign culture, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are making themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The Business Department has an international business concentration designed specifically for business majors. Details of this option can be obtained from the Business Department. The structure of the minor for all other majors consists of:

1. *Foreign language competency*: 6 semester hours in oral expression, textual analysis, and composition beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level I + on the ACTFL/ETS scale.
2. *Three required foundation courses* (9 hours):

An 111	Understanding Human Cultures
Ec 307	International Economics* or
Ec 371	Economic Development or
Ec 372	International Political Economy
	(only one economics course may be selected)
PS245	International Relations
3. *Four elective courses* (12 hours) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 317	International Marketing
BA 371	International Business Management
BA 469	International Comparative Management
Com 372	International Communications

Ec 307	International Economics*
Ec 308	Comparative Economic Systems*
Ec 371	Economic Development*
Ec 372	International Political Economy
Fr/Ge/Sp 311	Making of Modern Society
Fr/Ge/Sp 312A & 312B	Languages for the Professions
Hi 205	Modern Far East
Hi 216	English History since 1603 (Modern Britain)
Hi 218	Europe in the Twentieth Century
Hi 220	History of the Soviet Union
Hi 323	History of China
Hi 324	History of Japan
Hi 327	History of Africa
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
PS 345	American Foreign Policy
PS 351	Comparative Governments
PS 352	Latin American Politics
PS 353	Politics of Developing Nations
PS 444	United States Security Policy
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The Director of International Studies (Professor Wayne Selcher) will help the student with course selections. With the exception of courses specifically required for the major (e.g., Political Science 245 for Political Science majors), courses in the minor must be selected from core courses or free electives. Completion of the minor is indicated on a student's transcript.

Pre-Law Program

Chairman of the Pre-law Committee: H. Herbert Poole (*History*).

Members of the Committee: James L. Dively (Biology), Paul Gottfried (*Political Science*), George A. Gliptis (*Business*), Louis F. Martin (*English*), Anthony M. Matteo (*Philosophy*), E. Fletcher McClellan (*Political Science*), W. Wesley McDonald (*Political Science*), Richard L. Mumford (*History*).

Because the training of a pre-law student may be accomplished in almost any academic discipline, such as English, History, Political Science, Philosophy, or Business, a committee has been established to assist the pre-law student during his undergraduate years.

The Pre-Law Committee works with the pre-law student and the student's major advisors to ensure that a reasonable and sound course of study is followed is acceptable for entry into a school of law. The committee collects literature that aids the student in selecting a suitable school, and advises the applicant on the registration and the preparation for the Law School Admissions Test (LSAT). The committee guides the preparation and submission of applications and supervises the requests for letters of recommendation for worthy candidates.

In order to create the most effective curriculum, the pre-law student should introduce himself to the Pre-Law Committee early in the freshman year to discuss future course scheduling and long-term plans.

The Pre-Law Committee also supervises the activities of the Law Club and works closely with the campus Forensic Team; both activities are highly recommended for pre-law students.

Over the years, the members of the committee have maintained a liaison with the schools of law which are most frequently attended by Elizabethtown College graduates. These include: American University, Antioch College, University of Baltimore, Boston University, University of Bridgeport, Case Western Reserve University, University of Dayton, University of Delaware, Dickinson College, Duke University, Duquesne University, Fordham University, Georgetown University, George Washington University, Hofstra, University of Miami, University of Nebraska, New York Law School, New York University, Ohio Northern University, Oklahoma, Pace, University of Pennsylvania, Pepperdine, Pittsburgh, Rutgers, Saint Mary's University of San Antonio, Syracuse, Temple, University of Toledo, Valparaiso, Vermont Law School, Villanova, Washington and Lee, and William and Mary.

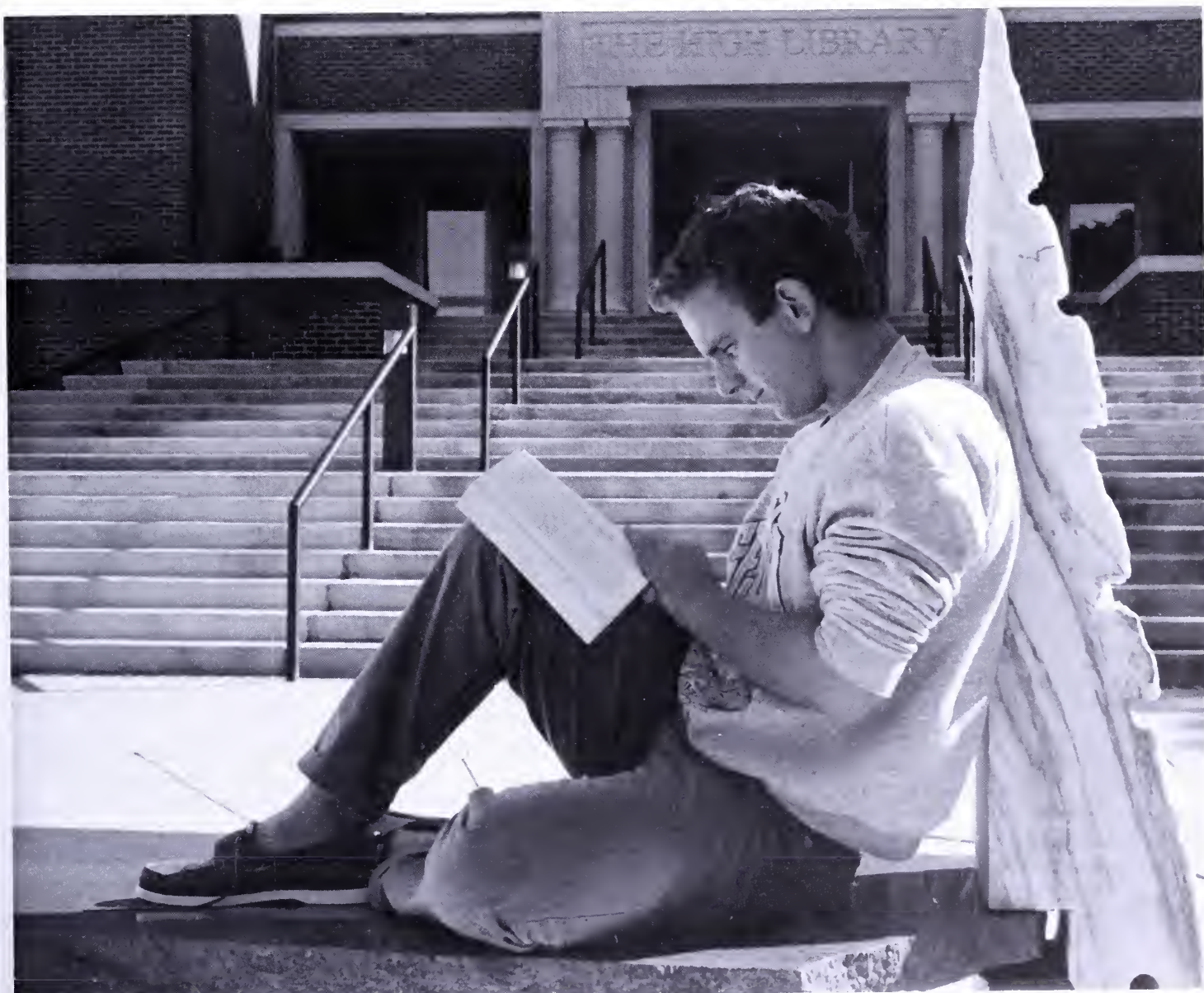
Public Administration Minor

The public administration minor provides knowledge, skills, and experience to students desiring a career in public service. Combined with an appropriate academic major, the minor prepares students for careers in public management, public policy analysis and administration, legislative affairs, urban and regional planning, international development administration, and related fields. In particular, the minor is designed to provide a necessary background for students who intend to pursue graduate study in public affairs.

The requirements of the minor reflect the interdisciplinary nature of governmental activity. The courses intro-

duce the student to: (1) the political, economic, and organizational environment of the public administrator; and (2) the major activities, responsibilities, and roles of public administrators. An important component of the minor is participation in the Capital Semester Internship Program (Political Science 471), which furnishes internship opportunities with state and local government agencies.

The minor is available to all students except political science majors, who may elect a concentration in public administration within the major. The required courses in the minor are: Economics 101; Political Science 111 or 351, 361 and 471; Business Administration 376; and Sociology 360. Students interested in working for federal, state, or local governments in the United States should take Political Science 111, while students who want to pursue public-sector work outside the U.S. should take Political Science 351. With the exception of Economics 101, courses in the minor may not count toward a student's academic major. For additional information and assistance, contact Dr. E. Fletcher McClellan of the Political Science Department.



Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Philosophy*
B.D., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; LL.D., Elizabethtown College (1952-1984)

Louise B. Black, *Associate Professor of English Emerita*
B.S., Elizabethtown College; M.S., Temple University (1968-1988)

I.L. Bossler, *Professor of Mathematics Emeritus*
B.S., Ursinus College; M.S., Purdue University (1959-1989)

Stanley Bowers, *Associate Professor of Education Emeritus*
B.S., Millersville State College; M.Ed., Temple University (1965-1990)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1945-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Université, University of Paris (1966-1973)

Robert B. Garrett, *Assistant Professor of Health and Physical Education Emeritus*
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967-1988)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

Henry M. Libhart, *Professor of Art Emeritus*
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967-91)

J. Henry Long, *Associate Professor of Sociology Emeritus*
B.S., Elizabethtown College; B.D., D.D., Bethany Theological Seminary (1969-1988)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Rollin E. Pepper, *Professor of Biology Emeritus*
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964-1990)

Elisabeth D. Shaw Russell, *Associate Professor of English Emerita*
B.A., M.A., Oxford University (1969-1988)

Carl N. Shull, *Professor of Music Emeritus*
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961-1988)

Harry L. Simmers, *Associate Professor of Music Emeritus*
B.S., Bridgewater College; M.M., American Conservatory of Music (1966-1990)

Donald P. Smith, *Assistant Professor of Physical Education Emeritus*
B.S., University of Mississippi (1954-64, 1972-88)

Royal E. Snavely, *Counselor Emeritus*
M.A., Ohio State University (1965-1990)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Robert S. Young, *Director of Special Gifts Emeritus*
(1950-1984)

Robert E. Ziegler, *Professor of Science Education Emeritus*
B.A., Bridgewater College; M.R.E., Bethany Seminary; M.S., Ph.D., University of Wisconsin (1966-1988)

The remaining faculty member listings indicate two dates. The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)

B.A., M.A., University of Maine; Ph.D., Temple University (1968)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)

James L. Dively, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)

Donald F. Durnbaugh, *Carl W. Zeigler Professor of Religion and History* (1989)
B.A., Manchester College; M.A., University of Michigan; Ph.D., University of Pennsylvania (1989)

J. Thomas Dwyer, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)

Delbert W. Ellsworth, *Professor of Psychology* (1988)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)

Charles Fazzi, *Edgar T. Bitting Professor of Accounting* (1988)
B.S., M.B.A., Ph.D., The Pennsylvania State University (1988)

Paul Gottfried, *Professor of Humanities* (1989)
A.B., Yeshiva University; M.A., Ph.D., Yale University (1989)

John F. Harrison, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)

J. Robert Heckman, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)

Jack L. Hedrick, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963)

Frederic E. Hoffman, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)

Otis D. Kitchen, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)

Donald E. Koontz, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)

Donald B. Kraybill, *Professor of Sociology* (1984) and *Director of the Galen and Jessie B. Young Center for the Study of Anabaptist and Pietist Groups*.
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)

Carroll L. Kreider, *Professor of Business* (1989)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)

J. Kenneth Kreider, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964)

Robert C. Moore, *Professor of Communications* (1989)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983).

Richard L. Mumford, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)

Zoe G. Proctor, *Professor of Chemistry* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)

William V. Puffenberger, *Professor of Religion* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967).

John P. Ranck, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)

D. Paul Rice, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)

Malkia Robert, *Visiting Professor of Art, Fall 1991* (1991)
B.F.A., Howard University; A.M., University of Michigan (1991)

Carmine T. Sarracino, *Professor of English* (1991)
B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973)

Charles D. Schaeffer, Jr., *A.C. Baugher Professor of Chemistry* (1991)
B.A., Franklin and Marshall College; Ph.D., State University of New York at Albany (1976)

Wayne A. Selcher, *Professor of International Studies and Director of International Studies* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969)

Ronald L. Shubert, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)

Martin O. L. Spangler, *Professor of Chemistry* (1968)
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966)
Sabbatical leave, Spring 1992.

Stanley T. Sutphin, *Professor of Philosophy* (1970)
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963)

Bela Vassady, Jr., *Horace E. Raffensperger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)

Thomas R. Winpenny, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)
Sabbatical leave, Spring 1992.

Associate Professors

Jill Sunday Bartoli, *Associate Professor of Education* (1990)

B.A., M.A., University of Kentucky; M.Ed., Shippensburg State College; Ph.D., University of Pennsylvania (1990)

Terry Blue, *Associate Professor of Education* (1990)

B.A., Juniata College; M.A., Temple University; Ph.D., Pennsylvania State University (1990)

Paula R. Boothby, *Associate Professor of Education* (1990)

A.B., Kalamazoo College; M.A., Western Michigan University; Ed.D., University of North Dakota (1990)

Richard R. Crocker, *Dean of College Life and Associate Professor of Religious Studies* (1990)

B.A., M.A., Brown University; M.Div., Ph.D., Vanderbilt University (1990)

Uldis Daiga, *Associate Professor of Modern Languages* (1973)

B.S., University of North Carolina; M.A., Temple University (1965)

Paul M. Dennis, *Associate Professor of Psychology* (1973)

B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)

Robert D. Dolan, *Associate Professor of Mathematics, Clinical Professor in Mathematics Education* (1970)

B.S., California State College; M.A., West Virginia University (1964)

Darrell R. Douglas, *Associate Professor of Music* (1972)

B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972) Sabbatical leave, Fall 1991.

Leonard A. Eiserer, *Associate Professor of Psychology* (1986)

B.A., University of Maine; M.A., Ph.D., Bryn Mawr College (1981)

Martha A. Eppley, *Associate Professor of Economics* (1971); *Associate Dean of the Faculty and Registrar* (1979)

B.S., Elizabethtown College; M.B.A., Indiana University (1964)

Hugh G. Evans, Jr., *Associate Professor of Economics* (1971)

B.S., Juniata College; M.A., Pennsylvania State University (1968)

Boyd Fox, *Associate Professor of Education* (1973)

B.S., M.S., Ed.D., Utah State University (1970)

E. Margaret Gabel, *Assistant to the Director of the Library and Head Cataloguer*

M.S., L.S., Syracuse University

George A. Gliptis, *Associate Professor of Business* (1972)

B.S., J.D., University of Virginia (1970)

Suzanne Schmidt Goodling, *Associate Professor of Modern Languages* (1970)

B.A., Gettysburg College; M.A., Middlebury College (1964)

Maurice R. Hoppie, *Associate Professor of Economics* (1987)

B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)

Jacqueline L. Jones, *Associate Professor of Occupational Therapy* (1987)

B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign, OTR/L (1987)

Yvonne E. Kauffman, *Associate Professor of Physical Education* (1990)

B.S., Bridgewater College; M.Ed., West Chester State College (1966)

John E. Koontz, *Associate Professor of Mathematics* (1970)

B.S., Juniata College; M.A., Bowling Green State University (1966)

Ronald L. Laughlin, *Associate Professor of Biology* (1972)

B.A., Wabash College; M.S., Ohio State University (1968)

Thomas R. Leap, *Associate Professor of Computer Science* (1985)

B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)

R. Bruce Lehr, *Associate Professor of Sociology* (1966)

A.B., Bucknell University; M.A., Mexico City College (1961)

Anthony M. Matteo, *Associate Professor of Philosophy* (1986)

B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

E. Fletcher McClellan, *Associate Professor of Political Science* (1989)

B.A., Franklin and Marshall College; M.A., East Tennessee State University; Ph.D., The University of Tennessee (1982)

W. Wesley McDonald, *Associate Professor of Political Science* (1986)

B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)

Jennifer Meoli, *Associate Professor of Business* (1991)

B.S., State University of New York at Cortland; M.S., Ph.D., Purdue University (1991)

Robert K. Morse, *Associate Professor of Mathematics* (1971)

B.S., Franklin and Marshall College; M.A., Temple University (1968)

Stanley R. Neyer, *Associate Professor of Business* (1972)

B.S., Elizabethtown College; M.B.A., Shippensburg State College (1964)

D. Kenneth Ober, *Associate Professor of Physical Education and Director of Athletics* (1972)

B.S., M.S., West Chester State College (1964)

Lynn S. Orlando, *Associate Professor of Education* (1988)

B.A., Point Park College; M.Ed., Bloomsburg State College; Ed.D., The Pennsylvania State University (1988)

Paul Petersen, *Associate Professor of Occupational Therapy* (1988)

B.S., Syracuse University; M.A., New York University; Ph.D., University of Nebraska at Lincoln, OTR/L (1984) Sabbatical leave, academic year 1991-1992.

Frank P. Polanowski, *Associate Professor of Biology* (1981)

B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)

H. Marshall Pomroy, *Associate Professor of Business* (1971)

B.S., Elizabethtown College; M.Adm., Pennsylvania State University; C.P.A. (1964)

H. Herbert Poole, Jr., *Associate Professor of History* (1982)

B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969)

Raymond R. Reeder, *Associate Professor of Chemistry* (1973)

B. S., Case Institute of Technology; Ph.D., Brown University (1969)

John C. Rohrkemper, *Ralph W. Schlosser Associate Professor of English* (1987)

B.A., M.A., Ph.D., Michigan State University (1981)

Donald E. Smith, *Associate Professor of Communications* (1973)

B.S., M.S., State University of New York College at Geneseo (1969)

John W. Stites, *Associate Professor of Music* (1976)

B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, *Associate Professor of Business* (1987)

B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut; Ph.D., Temple University (1987)

John A. Teske, *Associate Professor of Psychology* (1990)

B.A., Indiana University; M.A., Ph.D., Clark University (1986)

Glenn H. Thompson, Jr., *Associate Professor of Earth Science* (1973)

B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)

Randolph L. Trostle, *Associate Professor of Business* (1984)

B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)

Barbara C. Tulley, *Associate Professor of Computer Science* (1989)

B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)

Assistant Professors

Kurt M. Barnada, *Assistant Professor of Modern Languages* (1988)

B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University. (1988)

David A. Bauman, *Assistant Professor of Education* (1988)

B.A., Goshen College; M.Ed., Millersville University (1988)

Vivian R. Bergel, *Assistant Professor of Social Work* (1987)

B.A., M.S.W., West Virginia University; Ph.D., University of Maryland at Baltimore (1987)

Cynthia Beyerlein, *Assistant Professor of Business* (1985)

B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)

Morteza Bina, *Assistant Professor of Computer Science* (1990)

B.S., Arya Mehr University of Technology; D.E.A., Institut National Polytechnique de Grenoble; M.S., Bowling Green State University; Ph.D., Universite de Technologie de Compiegne (1990)

Christina A. Bucher, *Assistant Professor of Religion* (1988)

A.B., Elizabethtown College; M.A.Th., Bethany Theological Seminary, Ph.D., Claremont Graduate School (1988)

Jamie M. Byrne, *Assistant Professor of Communications* (1988)

B.S., M.S., Murray State University (1988)

J. Sue Dolan, *Assistant Professor of Business* (1980)

B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

Neil A. Dominas, *Assistant Professor of Communications* (1990)

B.A., University of Rochester; Ph.D., University of Wisconsin-Madison (1990)

Linda E. Dorsten, *Assistant Professor of Sociology* (1990)

B.A., Otterbein College; M.A., Ohio State University; Ph.D., Ohio State University (1990)

Sharon K. Farley, *Assistant Professor of Occupational Therapy* (1991)

B.S., Elizabethtown College; M.S., Towson State University; OTR/L (1987)

David Ferruzza, *Assistant Professor of Physics and Engineering and Director of the Engineering Program* (1990)

B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology. (1984)

Milton Friedly, *Assistant Professor of Art* (1990)

A.A., Northwest Community College; B.F.A., Arizona State University; M.F.A., University of Wyoming (1987)

John B. Gaffney, *Assistant Professor of Physics* (1988)

B.A., M.A., Ph.D., Columbia University (1988)

Craig Hergert, *Assistant Professor in Rhetoric and Composition* (1990)

B.A., Concordia College; M.A., University of Missouri-Columbia; Ph.D., Bowling Green State University (1990)

Patricia A. Hill, *Assistant Professor of Business* (1988)

B.A., Gettysburg College; M.B.A., University of Baltimore (1988)

Jack Kasar, *Assistant Professor of Occupational Therapy and Clinical Education Coordinator* (1989)

B.A., West Chester University; M.S., Virginia Commonwealth University; Ph.D., University of Pennsylvania, OTR/L (1988)

Beverly A. Kelly, *Assistant Professor of Occupational Therapy* (1988)

B.S., State University of New York at New Paltz; M.A., New York University, OTR/L (1988)

Link Martin, Jr., *Assistant Professor of Social Work and Director of Field Instruction* (1988)

B.S., Murray State University; M.S.W., University of Hawaii (1988)

Louis F. Martin, *Assistant Professor of English* (1988)

B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)

Paul V. McCormick, *Assistant Professor of Biology* (1991)

B.S., M.S., Virginia Polytechnic Institute and State University; Ph.D., University of Louisville (1991)

Dana Gulling Mead, *Assistant Professor of English* (1989)

B.A., M.A., University of Tennessee, Knoxville; Ph.D., Texas Christian University (1989)

Donald G. Muston, *Assistant Professor of Business* (1977)

B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Jane E. Palmquist, *Assistant Professor of Music* (1990)

R.A., Northern State College; M.A., Ph.D., University of Texas at Austin (1990)

Lawrence W. Polin, *Assistant Professor of Mathematics* (1989)

B.S., St. John's University; Ph.D., State University of New York at Stony Brook (1989)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)

B.A., Gettysburg College; M.S., Ph.D., Vanderbilt University (1988)

Michael J. Rohrbacher, *Assistant Professor of Music Therapy* (1989)

B.M., East Carolina University; M.S., Johns Hopkins University (1989)

Gabriela R. Sanchis, *Assistant Professor of Mathematics* (1991)

B.S., Syracuse University; M.A., Ph.D., University of Rochester (1991)

Michael Severeid, *Assistant Professor of Communications and Theatre* (1990)

A.B., Middlebury College; M.A., Central Missouri State University (1990)

Jeannette Roberts Shumaker, *Assistant Professor of English* (1990)

B.A., University of Redlands; M.A., Ph.D., Claremont Graduate School (1990)

William M. Stuckey, *Assistant Professor of Physics* (1988)

B.S., Wright State University; M.S., Ph.D., University of Cincinnati (1988)

Sharon R. Trachte, *Assistant Professor of Modern Languages* (1986)

B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)

Hans-Erik Wennberg, *Assistant Professor of Communications* (1984)

B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Robert P. Wheelersburg, *Assistant Professor of Anthropology, Assistant Dean of the Faculty* (1989)

B.A., Ohio State; A.M., Ph.D., Brown University (1989)

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)

B.A., Bridgewater College (1968)

Instructors

Mary Klug Ferraro, *Instructor in Occupational Therapy* (1991)

B.S., SUNY - Downstate Medical Center; Ed.M., Temple University (1991)

Thomas E. Hagan, Jr., *Faculty Sabatical Replacement* (1991)

B.S., Villanova University; Ph.D., University of Delaware (1991)

James W. Hunter, Jr., *Instructor in Theatre and Technical Director of Theatre* (1991)

B.A., University of North Carolina-Asheville (1991)

Ingrid Muan, *Instructor in Art* (1991)

B.A., Bryn Mawr College; M.F.A., University of California, Davis (1991)

Angela M. Salvadia, *Instructor in Occupational Therapy* (1991)

B.S., Elizabethtown College; M.S., Sargent College, Boston University (1991)

Part-time Faculty

Carole L. Isaak, *Supervisor of Developmental Studies Program*

B.A., University of Hawaii

Margaret McFarland, *Assistant Professor of Social Work* (1990)

B.S.W., Loch Haven University; M.S.W., Marywood School of Social Work; Ph.D., University of Maryland at Baltimore (1990)

Candace H. O'Donnell, *Lecturer in Education and English and Supervisor of Secondary Education*

B.A., Washington University; M.A., Millersville State College

Debra D. Seyler, *Lecturer in Music and Director of the Preparatory Division*

B.S., M.A., Indiana University of Pennsylvania

Adjunct Faculty

On-Campus

Sherry Albert, *Department of Occupational Therapy*

Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Joseph Anderson, *Department of Occupational Therapy*

B.S., M.Ed., M.B.A., Pennsylvania State University

Linda Bartholomew, *Department of Occupational Therapy*

B.S., Elizabethtown College

Virginia B. Bates, *Instructor in English as a Second Language*

B.A., Southern Illinois University; M.A., University of California at Los Angeles

Ann S. Dinsmore, *Department of Fine and Performing Arts*

B.S., Elizabethtown College

Darrel Frey, *Department of Physics*

B.S.M.E., Drexel University

Laszlo Geder, *Department of Occupational Therapy*

M.D., Ph.D., University of Debrecen, Hungary

Doris J. Hall-Gulatti, *Department of Fine and Performing Arts*
B.M., Peabody Conservatory of The Johns Hopkins University; M.M., University of Michigan

Cynthia Hess, *Department of English*
B.S., Millersville State College; M.A., Millersville University

Linda Kirkpatrick, *Department of Fine and Performing Arts*
M.M., North Texas State University

David E. Leithmann, *Department of Fine and Performing Arts*
B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University

Warren Munick, *Department of Sociology/Anthropology*

Anna Surls Moore, *Department of Social Work*
B.A. Roosevelt University; MSW University of Illinois

Grant Moore, *Department of Fine and Performing Arts*

Gretchen N. Patti, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Alison J. Roth, *Department of Fine and Performing Arts*
B.M., Oberlin Conservatory; M.M., New England Conservatory of Music

Janet Rowand, *Department of Occupational Therapy*
B.S., Elizabethtown College; OTR

Carl E. Schroeder, *Department of Fine and Performing Arts*

Laurie A. Showers, *Department of Mathematical Science*
B.S., Elizabethtown College

William M. Sloane, *Department of Communications*
B.A., York College of Pennsylvania; J.D., Delaware Law School of Widener University; L.L.M., Temple University; S.J.D., Thomas Jefferson College of Law of Heed University

Janice Stouffer, *Department of Fine and Performing Arts*

Catherine K. Strite, *Department of Sociology/Anthropology*

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Carol S. Weavill, *Department of Computer Science*
B.S., Elizabethtown College

James Wirtz, *Department of Political Science*

Judy Williams-Henry, *Department of Fine and Performing Arts*
B.F.A., Boston Conservatory of Music; M.S. Wheelock College

Off-Campus Medical Technology

Margaret Black, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S., Lebanon Valley College; M.T. (ASCP)

Sharon Deitrich, *Reading Hospital and Medical Center*, West Reading, Pa.
B.S., Kutztown University

John W. Eiman, *Abington Memorial Hospital*, Abington, Pa.
M.D., University of Pennsylvania School of Medicine

Edward Eisenhower, *St. Joseph Hospital*, Lancaster, Pa.
M.D., Medical University of South Carolina

Gerald Fahs, *Lancaster General Hospital*, Lancaster, Pa.
M.D., Temple University School of Medicine

Janice Fogleman, *Harrisburg Hospital*, Harrisburg, Pa.
M.Ed., Pennsylvania State University; M.T. (ASCP)

Nadine Gladfelter, *Lancaster General Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Susan Herr, *St. Joseph Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Brenda Kile, *York Hospital*, York, Pa.
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, *Harrisburg Hospital*, Harrisburg, Pa.
M.D., Airlaugga University School of Medicine

John A. Mihok, *Monmouth Medical Center*, Long Branch, N. J.
B.S., University of Maryland; Catholic University of America; S.M. (ASCP)

Julian W. Potok, *Polyclinic Medical Center*, Harrisburg, Pa.
D.O., Philadelphia College of Osteopathic Medicine

Lynn Russell, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S. Springfield College; B.S. Towson State College; M.A., Central Michigan University; M.T. (ASCP)

Barbara Scheelje, *Abington Memorial Hospital*, Abington, Pa.
B.S., Colby-Sawyer College; M.T. (ASCP)

I. Donald Stuard, *Reading Hospital and Medical Center*, West Reading, Pa.
M.D., University of Rochester School of Medicine

John P. Whiteley, *York Hospital*, York, Pa.
M.D., Temple University School of Medicine

Louis Zinterhofer, *Monmouth Medical Center*, Long Branch, N. J.
M.D., Tulane Medical School

Psychology

Ralph Norgran, *Department of Psychology*, *Hershey Medical Center*, Hershey, Pa.
A.B., University of Pennsylvania, A.M., Ph.D. University of Michigan

Social Work

Margie Adelman, *First Step*, Harrisburg, Pa.
M.S.W., University of Pittsburgh

Carl Back, *Cities In Schools of Dauphin County*, Harrisburg, Pa.
M.Ed., Villanova University

David H. Bender, *Lancaster County Council on Alcoholism and Drug Abuse*, Lancaster, Pa.
B.A., Boston College

Constance V. Bieling, *Gnaden Huetten Memorial Hospital*, Lehigh, Pa.
M.S.W., Marywood College

Molly Casey-Mock, *Hershey Medical Center*, Hershey, Pa.
M.S.W., Maryland College

Patricia DeMooy, *Delaware County Juvenile Probation Services*, Media, Pa.
M.S.W., University of Pennsylvania

Kay Eisenhour, *Catholic Charities Adoption Department*, Harrisburg, Pa.
M.S.W., University of Maryland

Lynn G. Everhart, *Children's Playroom*, Harrisburg, Pa.
M.S., University of Texas

James Fuddy, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Pennsylvania

Laura Handford, *Capitol Area Intermediate Unit #15*, Camp Hill, Pa.
M.S.W.

Kevin Jacoby, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Maryland

John R. Lamb, *Cenacle Shelter*, Harrisburg, Pa.
M.S.W., University of Pennsylvania

Janice Lehr, *Pennsylvania Chapter, National Association of Social Workers*, Harrisburg, Pa.
M.S.W., West Virginia University

Pamela McDermott, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Michigan

Jill McVey, *Lancaster County Children Youth Social Services*, Lancaster, Pa.
M.S.W., Temple University

Fiona Patterson, *Polyclinic Medical Center*, Harnsburg, Pa.
M.S.W., University of Pennsylvania

Gerald J. Ressler, *FOCUS Partial Hospital Program Philhaven Hospital*, Mt. Gretna, Pa.
M.S.W., Marywood College

Gary Shuey, *Cumberland County Children and Youth*, Carlisle, Pa.
M.S.W., Marywood College

Jo Sterner, *YWCA Rape Crisis/Domestic Violence Services*, Harrisburg, Pa.
B.S., Boston University

Leann Weaver, *Masonic Homes*, Elizabethtown, Pa.
M.S.W., Marywood College

Martin Yespe, *Crisis Intervention*, Harrisburg, Pa.
M.S.W., University of Maryland

Clinical Education Centers

Occupational Therapy

Abington Memorial Hospital, Abington, Pa.

Adult Day Care, Hellam, Pa.

Allegheny General Hospital, Pittsburgh, Pa.

All Saints Hospital, Wyndmoor, Pa.

Allentown State Hospital, Allentown, Pa.

Allied Services for the Handicapped, Scranton, Pa.

Altoona Hospital, Altoona, Pa.

Ancora Psychiatric Hospital, Hammonton, N.J.

Betty Bacharach Rehabilitation Center, Pomona, N.J.

Baltimore City Hospital, Baltimore, Md.

Bergen Pines County Hospital, Paramus, N.J.

Binghamton Psychiatric Center, Binghamton, N.Y.

Bryn Mawr Rehabilitation Hospital, Malvern, Pa.

Carlisle Hospital, Carlisle, Pa. Chambersburg Hospital, Chambersburg, Pa.

Charter Fairmount Institute, Philadelphia, Pa.

Chestnut Hill Rehabilitation Hospital, Wyndmoor, Pa.

Children's Hospital of Pittsburgh, Pittsburgh, Pa.

Clifton T. Perkin's Hospital Center, Jessup, Md.

Coatesville VA Medical Center, Coatesville, Pa.

Colonial Manor, York, Pa.

Community Hospital of Lancaster, Lancaster, Pa.

Community Rehabilitation Specialists, Erie, Pa.

Crozier-Chester Medical Center, Chester, Pa.

Danbury Hospital, Danbury, Conn.

Danville State Hospital, Danville, Pa.

Deer's Head Hospital Center, Salisbury, Md.

D. T. Watson Rehabilitation Hospital, Sewickley, Pa.

Eagleville Hospital and Rehabilitation Center, Eagleville, Pa.

Eastern Pennsylvania Psychiatric Institute, Philadelphia, Pa.

Eastern State Hospital, Williamsburg, Pa.

Easton Hospital, Easton, Pa.

Elizabethtown Hospital and Rehabilitation Center of the Pennsylvania State University, Elizabethtown, Pa.

Ephrata Community Hospital, Ephrata, Pa.

Eugenia Hospital, Lafayette Hills, Pa.

Fallston General Hospital, Fallston, Md.

Fort Howard VA Medical Center, Fort Howard, Md.

Francis Scott Key Medical Center, Baltimore, Md.

Freehold Area Hospital, Freehold, N.J.

Garden State Rehabilitation Center, Toms River, N.J.

Geisinger-Wyoming Valley Medical Center, Wilkes-Barre, Pa.

Georgetown University Hospital, Washington, D.C.

Good Samaritan Hospital, Baltimore, Md.

Good Samaritan Hospital, Lebanon, Pa.

Good Shepherd Home & Rehabilitation Hospital, Allentown, Pa.

Great Lakes Rehabilitation Hospital, Erie, Pa.

Hannemann University Hospital, Philadelphia, Pa.

Harrisburg Institute of Psychiatry, Harrisburg, Pa.

Harrisburg Hospital Community Mental Health Center, Harrisburg, Pa.	Montgomery General Hospital, Olney, Pa.	St. Rita's Medical Center, Lima, Ohio
Harrisburg Polyclinic Medical Center, Harrisburg, Pa.	Moss Rehabilitation Hospital, Philadelphia, Pa.	Saint Vincent Hospital and Medical Center, New York, N.Y.
Harrisburg State Hospital, Harrisburg, Pa.	Muhlenberg Medical Center, Plainfield, N.J.	San Francisco General Hospital, San Francisco, Calif.
Harmarville Rehabilitation Center, Pittsburgh, Pa.	New York University – Cornell Medical Center, White Plains, N.Y.	Sinai Hospital, Baltimore, Md.
Haverford State Hospital, Haverford, Pa.	Norristown State Hospital, Norristown, Pa.	Southern Hills Regional Rehabilitation Hospital, Princeton, W.Va.
Heatherbank Rehabilitation Center, Columbia, Pa.	North Virginia Mental Health Institute, Falls Church, Va.	Springfield Hospital Center, Sykesville, Md.
Hershey Medical Center, Hershey, Pa.	Options, Lancaster, Pa.	Taylor Hospital, Ridley Park, Pa.
Highland Health Facility, Baltimore, Md.	Our Lady of Lourdes Hospital, Camden, N.J.	Temple University Hospital, Philadelphia, Pa.
Hillside Hospital, Glen Oaks, N.Y.	Philadelphia Psychiatric Center, Philadelphia, Pa.	The Sheppard and Enoch Pratt Hospital, Baltimore, Md.
Holy Spirit Hospital & Mental Health Center, Camp Hill, Pa.	Philadelphia VA Medical Center, Philadelphia, Pa.	Thomas B. Finan Center, Cumberland, Md.
Homestead Nursing and Rehabilitation Center, Willow Grove, Pa.	Philhaven Hospital, Lebanon, Pa.	Thomas Jefferson University Hospital, Philadelphia, Pa.
Hospital of the University of Pennsylvania, Philadelphia, Pa.	Pottstown Memorial Hospital, Pottstown, Pa.	Trenton Psychiatric Hospital, West Trenton, N.J.
Howard County General Hospital, Columbia, Md.	Presbyterian University Hospital, Pittsburgh, Pa.	Truckee Meadow's Hospital, Reno, Nev.
Institute of Pennsylvania Hospital, Philadelphia, Pa.	Reading Hospital & Medical Center, West Reading, Pa.	University of Virginia Medical Center, Charlottesville, Va.
Institute of Psychiatry & Human Behavior, University of Maryland, Baltimore, Md.	Reading Hospital Day Treatment Center, West Reading, Pa.	V.A. Medical Center, West Haven, Conn.
Institute of Living, Hartford, Conn.	Reading Rehabilitation Hospital, Reading, Pa.	Walnut Creek Hospital, Walnut Creek, Calif.
Jefferson Hospital, Pittsburgh, Pa.	Rehabilitation Hospital for Special Services, Mechanicsburg, Pa.	Warren State Hospital, Warren, Pa.
John Heinz Institute, Wilkes-Barre, Pa.	Rehabilitation Hospital for Special Services, York, Pa.	Washington County Hospital Association, Hagerstown, Md.
Johns Hopkins Hospital of Baltimore, Baltimore, Md.	Rehabilitation Hospital for Special Services of Nittany Valley, Bellefonte, Pa.	Welkind Rehabilitation Hospital, Chester, N.J.
Kessler Institute for Rehabilitation, West Orange, N.J.	Rehabilitation Hospital of Altoona, Altoona, Pa.	Wernersville State Hospital, Wernersville, Pa.
Lancaster General Hospital, Lancaster, Pa.	Rehabilitation Institute of West Florida, Pensacola, Fla.	Western State Hospital, Staunton, Va.
Leading Nursing and Rehabilitation Center, Harrisburg, Pa.	Robert Wood Johnson Institute, Edison, N.J.	Williamsport Hospital, Williamsport, Pa.
Lebanon VA Medical Center, Lebanon, Pa.	Rockland Psychiatric Center, Orangeburg, N.Y.	Woodrow Wilson Rehabilitation Center, Fishersville, Va.
Louden Memorial Hospital, Leesburg, Va.	Rolling Hills Hospital, Elkins Park, Pa.	
McLean Hospital, Belmont, Mass.	Sacred Heart Hospital, Norristown, Pa.	
Magee Rehabilitation Hospital, Philadelphia, Pa.	St. Agnes Hospital, Baltimore, Md.	
Marlboro State Hospital, Marlboro, N.J.	Saint Francis General Hospital, Pittsburgh, Pa.	
Maryland General Hospital, Baltimore, Md.	Saint John's Hospital, Pittsburgh, Pa.	
Maryland Rehabilitation Hospital, Baltimore, Md.	Saint Joseph Hospital, Lancaster, Pa.	
Medcenter One, Bismark, N.Dak.	Saint Joseph Hospital, Reading, Pa.	
Medical Center of Delaware, Wilmington, Del.	St. Joseph's Hospital & Rehabilitation Center, Tacoma, Wash.	
Medical Center at Princeton, Princeton, N.J.	Saint Lawrence Rehabilitation Center, Lawrenceville, N.J.	
Mercy Hospital, Pittsburgh, Pa.	Saint Joseph's Medical Center, Yonkers, N.Y.	
Montebello Hospital, Baltimore, Md.	Saint Luke's Hospital, Bethlehem, Pa.	
Montevista Center, Las Vegas, Nev.	Saint Margaret Memorial Hospital, Pittsburgh, Pa.	

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M.Div., Northern Baptist Theological Seminary

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Director of Publications
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B.S., Elizabethtown College

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Ed.D., Temple University

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Palmyra, Pennsylvania
Consultant in Special Education, Department of Public Instruction, Commonwealth of Pennsylvania (retired)

Note: Year indicates expiration of term.

Index

A

Academic Advising 7
 Academic Dishonesty 15
 Academic Dismissal 12
 Academic Due Process 14
 Academic Good Standing 12
 Academic Honors 13
 Academic Judicial System 14
 Academic Majors 3
 Academic Minors 3
 Academic Probation 12
 Academic Program 3
 Core Program 3
 degrees offered 3
 majors offered 3
 minors offered 3
 Academic Standing 12
 Accounting 22. *See also* Business,
 Dept. of
 Adding Courses 10
 Administration 80
 Advanced placement 6
 Advising 7
 Allied Health Programs 66
 Anabaptist and Pietist Studies
 Minor 68
 Anthropology 18. *See also* Sociology
 and Anthropology, Dept. of
 Areas of Understanding 4
 Auditing Courses 8

B

Biology, Dept. of 18
 Biology Health Professions 6
 Board of Trustees 82
 Brethren Colleges Abroad
 program 5
 Business, Dept. of 21

C

Calculation of Grades 11
 Challenge Testing 7
 Change of Major 8
 Change of minor 8
 Change of Personal Information 8
 Change of Registration 10
 Checksheets 8
 Chemistry, Dept. of 25
 Class Attendance 10
 Class Standing 12
 CLEP Examinations 6
 College Scholars 13
 Common Core 4

1991-92 Academic Program

Communications, Dept. of 28
 Computer Science, Dept. of 30
 Continuing Education 16
 Convocation 16
 Core Program 3
 areas of understanding 4
 common core 4
 Old Core/New Core 4
 Course Load 8
 Credit by Examination 6
 Credit Requirements 13
 Credits 11

D

Dance. *See* Fine and Performing Arts,
 Dept. of
 Dean's List 13
 Declaration of major 8
 Declaration of minor 8
 Degrees Offered 3
 Departmental Honors 13
 Directed Study 5
 Directory 72
 Administrative Staff 81
 Board of Trustees 82
 Faculty 72
 Adjunct Faculty 76
 Assistant Professors 75
 Associate Professors 74
 Emeriti 72
 Instructors 76
 Professors 73
 the Administration 80
 Academic Affairs 80
 Business Affairs 80
 College Life 80
 Institutional Advancement 81
 Office of the President 80
 Dropping Courses 10

E

Early participation in graduation 14
 Early Warning System 12
 Earth Science. *See* Physics, Dept. of
 Economics 24. *See also* Business,
 Dept. of
 Education, Dept. of 33
 Educational Philosophy and
 Objectives 2
 Engineering. *See* Physics, Dept. of
 English, Dept. of 35

F

Fine and Performing Arts, Dept.
 of 38
 Forestry and Environmental
 Management 66
 French. *See* Modern Languages,
 Dept. of

Full-time status 8

G

General Science Certification 67
 German. *See* Modern Languages,
 Dept. of
 Grade Appeals 15
 Grade Point Average 14
 Grades 11
 Graduation 13
 ceremony 13
 Credit requirements 13
 early participation 14
 Grade point average 14
 On-campus credits 14

H

History, Dept. of 43
 Honors 13

I

Incomplete Grades 11
 Independent Study 5
 Individual Program Adjustments 13
 Interdisciplinary Programs 65
 Anabaptist and Pietist Studies
 minor 68
 Biology/Allied Health 66
 Forestry and Environmental
 Management 66
 General Science Certification 67
 International Studies minor 69
 Peace and Conflict Studies
 minor 69
 Pre-law 70
 Pre-medical 65
 Public Administration minor 70
 Social Studies Certification 68
 International Studies Minor 69
 Internships 6

J

Joint Institution Programs 6
 biology health professions 6
 pre-engineering 6
 pre-forestry 6

L

Leave of Absence 11
 Lecture Series 16

M

Mathematical Sciences, Dept. of 45
 Mission Statement 2
 Modern Languages, Dept. of 47
 Music. *See* Fine and Performing Arts,
 Dept. of

N

New Core 4

O

Occupational Therapy, Dept. of 48

Off-Campus Study 5

Old Core 4

On-Campus Credits 14

Overload Credits 8

P

Part-time Faculty 76

Part-time status 8

Pass/No Pass Grading 12

Peace and Conflict Studies Minor 69

Philosophy, Dept. of 51

Physical Education and Health, Dept.
of 53

Physics, Dept. of 53

Placement Testing 7

Political Science, Dept. of 56

Pre-allied Health 6

Pre-engineering 6

Pre-forestry 6

Pre-Law Program 70

Pre-medical Programs 65

Preregistration 9

Program Variations and Options 5

Psychology, Dept. of 57

Public Administration Minor 70

Q

Quality Points 11

R

Rank in Class 12

Readmission 11

Registration 9

pre-registration 9

Religious Studies, Dept. of 59

Repeating Courses 8

S

Schedule Changes 10

Social Studies Certification 68

Social Work, Dept. of 61

Sociology and Anthropology, Dept.
of 62

Spanish. *See* Modern Languages,
Dept. of

Special Privileges 13

Special Programs 16

Student Responsibilities 7

Study Abroad 5

T

Theatre. *See* Fine and Performing

Arts, Dept. of

Transcripts 9

Transfer of Credits 9

Trustees 82

Tutorials 5

V

Variations to Program 5

Visual Arts. *See* Fine and Performing
Arts, Dept. of

W

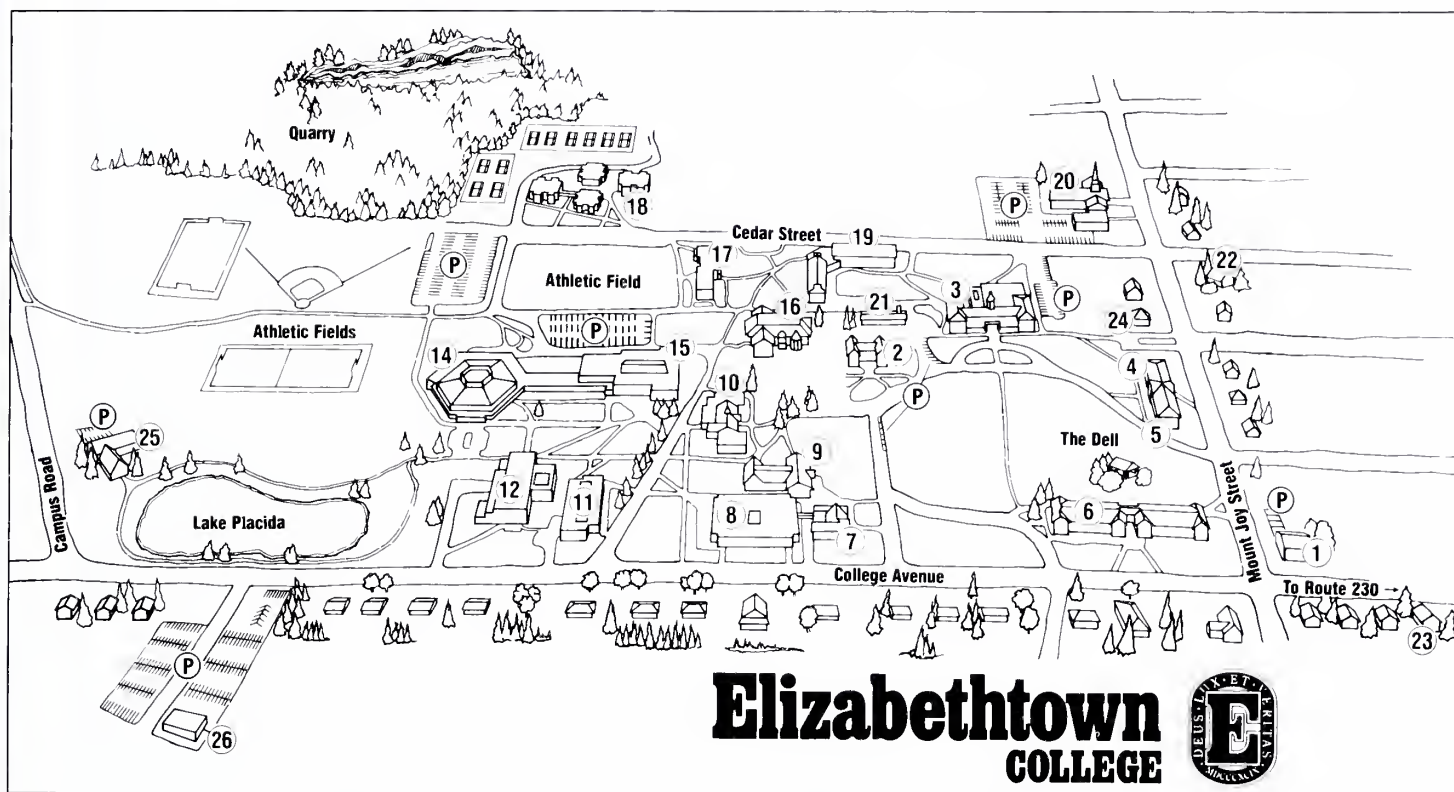
Withdrawal 10

from class 10

from College 10

Medical 10

Campus Map



The College's Offices and Facilities

1. Leffler House (Admissions)
 2. Alpha Hall (President, Provost, Treasurer, Personnel, Alumni, Development, College Relations, Conference Center.)
 3. Myer Hall (women's residence, dining hall)
 4. Student Health Center
 5. Royer Hall (women's residence)
 6. Schlosser Hall (women's residence)
 7. Wenger Center for the Humanities (English, History, Religion, Philosophy, Learning Center, Developmental Studies, Writing Services)
 8. Nicarry Hall (Business, Computer Science, Continuing Education, Education, Political Science, Sociology/Anthropology, Social Work, Small Business Center)
 9. Steinman Center (Communications, Art, Brinser Lecture Hall)
 10. Zug Memorial Hall (Business Office, Financial Aid, Registrar, Music)
 11. Musser Hall (Chemistry)
 12. Esbensshade Hall (Biology, Mathematics, Occupational Therapy, Physics, Psychology, Gible Theater)
 14. Thompson Gymnasium and Alumni Athletic Center (Athletics, Physical Education)
 15. Baugher Student Center (Dean of College Life, Residence Life, Career Development, Counseling Center, College Store, Jay's Nest (Snack Bar), Post Office, Duplicating Services, Student Publications, Chaplain, Alumni Auditorium, Student Activities)
 16. The High Library
 17. Brinser Hall (men's residence)
 18. Founders Hall (men's and women's residences)
 19. Ober Hall (men's and women's residence)
 20. Elizabethtown Church of the Brethren
 21. Preservation Hall (women's residence)
 22. Co-op Housing
 23. President's House
 24. Public Safety Office
 25. Bucher Meetinghouse and Young Center for Anabaptist and Pietist Studies
 26. Brown Building
- P-Parking

Location of Classrooms

The building is designated by the letter prefix to the number. The first digit indicates the floor of the building, i.e., N102 is the code for a room on the first floor Nicarry Hall.

P—Alumni Physical Education Center
R—Rider Hall
N—Nicarry Hall
W—Wenger Center
E—Esbensshade Hall
S—Steinman Center
M—Musser Hall
C—Young Center for Anabaptist and Pietist Studies

Elizabethtown COLLEGE



1992-93 Academic Program



378.73
E243H
1992-93

Calendar 1992-93

Fall Semester

August	24-28	Faculty Meetings and RA and PC Training
	29	Freshmen Arrive
	31	Registration Day; Evening Classes Begin, 6:30 p.m.
September	1	Day Classes Begin, 8:00 a.m.
	7	Labor Day—No Classes
	8	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	9	Fall Break—No Classes
	17	Homecoming
	21	Mid-term
November	25	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	26-29	Thanksgiving Recess
	30	Classes Resume 8:00 a.m.
December	11	Classes End, 5:00 p.m.
	14-19	Final Examinations

Spring Semester

January	11-15	Faculty Meetings and In-Service Programs
	18	Registration Day
	19	Classes Begin, 8:00 a.m.
March	5	Mid-term
	6-14	Spring Break—No Classes
	15	Classes Resume, 8:00 a.m.
April	8	Easter Recess Begins at 5:00 p.m.
	9-12	Easter Recess
	12	Evening Classes Resume, 6:30 p.m.
	13	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes, Tuesday Evening Classes Meet
May	7	Classes End, 5:00 p.m.
	10-15	Final Examinations
	22	90th Commencement

Summer Session

June 1- July 21

Calendar 1993-94

Fall Semester

August	23-27	Faculty Meetings and RA and PC Training
	28	Freshmen Arrive
	30	Registration Day; Evening Classes Begin, 6:30 p.m.
	31	Day Classes Begin, 8:00 a.m.
September	6	Labor Day—No Classes
	7	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	2	Homecoming
	8	Fall Break—No Classes
	20	Mid-term
November	24	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	25-28	Thanksgiving Recess
	29	Classes Resume 8:00 a.m.
December	10	Classes End, 5:00 p.m.
	13-18	Final Examinations

Spring Semester

January	10-14	Faculty Meetings and In-Service Programs
	17	Registration Day
	18	Classes Begin, 8:00 a.m.
March	4	Mid-term
	5-13	Spring Break—No Classes
	14	Classes Resume, 8:00 a.m.
	31	Easter Recess Begins at 5:00 p.m.
April	1-4	Easter Recess
	4	Evening Classes Resume, 6:30 p.m.
	5	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes, Tuesday Evening Classes Meet
May	6	Classes End, 5:00 p.m.
	9-14	Final Examinations
	21	91st Commencement

Summer Session

May 31- July 20

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The Academic Program



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Contents

Educational Philosophy and Objectives	2
The Academic Program	3
Course Descriptions	18
Biology	18
Business	21
Chemistry	25
Communications	28
Computer Science	31
Education	33
English	35
Fine And Performing Arts	38
(Art, Dance, Music, Theatre)	
History	43
Mathematical Sciences	45

Modern Languages	48
(French, German, Spanish)	
Occupational Therapy	49
Philosophy	52
Physical Education And Health	53
Physics, Earth Science, Engineering	54
Political Science	57
Psychology	58
Religious Studies	60
Social Work	62
Sociology And Anthropology	63
Interdisciplinary Programs	66
Directory	73
Index	84

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Elizabethtown College

Elizabethtown, Pennsylvania 17022-2298

Elizabethtown College:

Educational Philosophy and Objectives

The purpose of the founders of the College was to achieve "such harmonious development of the physical, mental, and moral powers of both sexes as will best fit them for the duties of life and promote their spiritual interests." The motto of the College for years expresses this goal: "Educate for Service."

The original charter statement of purpose identified the important outcomes of education as being the development of critical and constructive habits of thought; the capacity for clear and coherent self-expression; the understanding of the natural, social and cultural world; the acquiring of a sense of personal, ethical, and spiritual values and of responsibility to the society; and the acquisition of skills and knowledge in a specialization to make the student an effective and productive member of society. In developing a statement of philosophy and objectives that both reflect our present understandings, the following represents a reasonably broad institutional consensus of the appropriate educational philosophy and goals for the years ahead to which the full College community can and should relate:

Founded by members of the Church of the Brethren in 1899, Elizabethtown College aims to develop sound intellectual judgment, keen moral sensitivity and an appreciation for beauty in the world. This educational process fosters the capacity for independent thought and commitment to personal integrity. In keeping with its historical and religious tradition, the College affirms the values of peace, justice, and human dignity, striving to achieve a distinctive blend of the liberal arts and professional studies. This union of the world of spirit and the world of work is expressed in the College motto, "Educate for Service," and on its seal, *Deus Lux et Veritas*.

The College fulfills this mission by:

- Striving to attain a diverse academic community.
- Promoting cultural pluralism and international understanding in a collegial community.
- Creating an environment that encourages the spirit of free inquiry, stimulates intellectual curiosity, and cultivates academic achievement.
- Developing the skills for critical analysis and effective communication.
- Designing programs that foster maturity, leadership, and responsible citizenship.

- Providing campus-wide support services necessary for the development of mind, body, spirit.
- Serving as a learning, resource, and cultural center for society at large.

The institutional goals for the academic program at Elizabethtown College, in outline, reflect this general statement of educational philosophy:

1. A threefold purpose in the education of students:
 - a. A general education (core) requirement, developing analytical and relational process of thought, clear and coherent means of self-expression, and a growing understanding of self and environment through distributional and integrative requirements in the liberal arts.
 - b. A specific education requirement or major, preparing the student for advanced studies and/or career opportunities by adding the different experience of specialized in-depth knowledge to the breadth of the general educational requirements.
 - c. A body of electives ensuring flexibility in each student's program that will best suit individual needs and interests, whether in general or major areas of study.
2. Response to contemporary needs for greater international understanding, by providing general education in intercultural studies and languages.
3. Provision of support in both general education and major programs for cross-disciplinary and interdisciplinary education.
4. For major disciplines of study, inclusion of opportunities in most of the liberal arts traditions of sciences, fine arts, humanities, and social sciences, and in the professional areas; while maintaining balance between professional and liberal arts programs of study for majors.
5. Provision for adult educational opportunities in a variety of traditional and non-traditional modes, integrated as far as possible with the regular educational program and faculty.
6. Fostering an environment supportive of faculty research and professional development.
7. Supporting as a part of its regular educational program quality experiential-learning programs such as clinical experiences, supervised internships, field study and other off-campus courses, and similar activities.
8. Continuing to support or to develop as appropriate, strong cooperative programs with other institutions of higher learning.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of at least 125 or 128 semester hours of credit, including the completion of all requirements of the major and the core program; a grade point average of at least 2.00 in the major; and a grade point average of at least 2.00 overall.

The College offers three additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B.S.
Business Administration, B.S.
Chemical Physics (Physics), B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Computer Engineering (Physics), B.S.
Early Childhood Education, B.S.
Economics (Business), B.A.
Elementary Education, B.S.
Engineering (Physics), B.A.
Engineering Physics (Physics), B.S.
English, B.A.
Environmental Science (Biology), B.S.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Industrial Engineering (Physics), B.S.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages (French, German or Spanish), B.A.
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.

Occupational Therapy, B.S.
Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A.
Religious Studies, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work, B.A.
Sociology-Anthropology, B.A.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Anabaptist and Pietist Studies (Interdisciplinary)
Anthropology (Sociology)
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Communications
Computer Science
Economics (Business)
English
Fine and Performing Arts
History
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Peace Studies (Interdisciplinary)
Philosophy
Physics
Political Science
Psychology
Public Administration (Interdisciplinary)
Religious Studies
Sociology
Statistics (Mathematics)
Visual Arts

The Core Program

Through the Core Program, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to experience a core curriculum of traditional and innovative liberal arts areas that complement both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: the Common Core,

which consists of the Freshman Seminar and the Junior/Senior Colloquium; and Areas of Understanding in which students may choose from approved Core courses in prescribed academic areas. (Approved courses are identified in the course listings.)

Alternatives to the Core Program, or deviations from it, must be approved in advance by the Academic Standing Committee and the Dean of the Faculty.

Common Core Credit Hours

Freshman Seminar 3
Entering freshmen take a Freshman Seminar during their first semester.

Junior/Senior Colloquium 3
All courses in all Areas of Understanding must be completed before students begin the colloquium. The theme which the Junior-Senior Colloquium will address for the academic year 1992-93 and 1993-94 is "Individuality and Community."

Areas of Understanding Credit Hours

Power of Language 3
Based upon writing skill level, new students are required to take in their first year either English 011 (a college composition preparatory course that does not count for Core or graduation credit), English 100, Writing and Language (a college composition course), or an advanced 100-level Power of Language course. Students placed in English 011 must eventually take English 100 for Power of Language Core credit. Students placed in English 100 must successfully complete English 100 for their Power of Language core. Students who receive AP or transfer credit for English 100 or who enroll in English 100, cannot receive credit for English 150, Advanced Writing and Language.

Mathematical Analysis 3-4
Based upon mathematical analytical skill level, new students are required to take in their first year either Math 011 (a college mathematics preparatory course that does not count for Core or graduation credit), or a 100-level mathematical analysis course. Students placed in Math 011 must successfully complete this course before enrolling in mathematical analysis courses.

Creative Expression 3
Complete three hours in Creative Expression courses.

Cultural Heritage 6
Complete six hours in Cultural Heritage courses.

Foreign Cultures and International Studies 3-4
Complete three or four hours in Foreign Cultures, International Studies, or foreign language courses. Students who use a modern language to fulfill this requirement complete either Modern Language 112, 211, or 212. Language background and placement test results determine the

appropriate level of college language study (112, 211, or 212).

Natural World 7-8
Complete seven or eight hours in Natural World courses. One course must be a laboratory course.

Social World 6
Complete six hours in Social World courses.

Values and Choice 3
Complete three hours in Values and Choice courses.

Physical Well Being 3
Complete three courses in Physical Well Being, at least two courses of which must be devoted to physical activity. No more than five PWB credits may be counted for graduation credit.

Additional Requirements:

- Students must take at least four 200-level courses to complete the Core Program. Prerequisites for 200-level Core Program courses include completion of the Freshman Seminar, Mathematical Analysis, and Power of Language, and three other 100-level Core Program courses.
- In Areas of Understanding requiring two or more courses, students must take the courses in different disciplines.
- Physical Well Being courses are excluded from the above restrictions, and do not satisfy the 100-level prerequisite requirements to take 200-level Core Program courses.
- Students may count only one course in their major department for Core. The major department course must be an elective in the department and may not fulfill a major requirement.
- Students are required to complete the appropriate level of mathematics, English, and/or modern language courses as determined by the College.
- Seniors may not enroll in 100-level Core Program courses except with the permission of the Dean of the Faculty.

Course Descriptions for Common Core

FS100* Freshman Seminar

3 credits. The Freshman Seminar provides an educational experience which is composed of several important components. First, it aims to develop intellectual skills such as critical analysis and synthesis, and communication skills such as speaking and writing. Second, it introduces students to the intellectual life of the College and lays the foundation for self-directed, independent thinking. For these reasons, the Freshman Seminar is planned to assist the student in the transition from high school to college.

JSC300* Junior/Senior Colloquium

3 credits. In the Junior/Senior Colloquium, students return to the seminar setting and explore a selected contemporary issue of national or world significance from perspectives other than those of the major. They are engaged in serious discourse with students and faculty from other

disciplines, examining broader intellectual, social, and ethical concerns associated with liberal learning. This experience culminates in the writing of a major paper which integrates prior learning and the diverse studies of the undergraduate experience.

Old Core/New Core

The Core Program described above applies to students who enter the College in the fall of 1990 or subsequent to that date. Students who entered prior to the fall of 1990 complete the General Education Core (known as "Old Core"). Specific requirements of the "Old Core" are found in the Academic Program books of 1989-90 or earlier. (The Core Program described in this catalog is known as "New Core.")

The "Old Core" includes both Core Area Requirements in Literature, Modern Languages, Fine Arts, Religion or Philosophy, History, Social Science, Mathematics, Natural Science and Physical Education, and the College Requirement in International Education. Please refer to the 1989-90 Academic Program book for specific details.

Program Variations and Options

In addition to majors and minors, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued, securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Office of Registration and Records at the beginning of the semester during which it will be completed. Application forms for Independent Study are available in the Office of Registration and Records.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional surcharge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 18 hours as a result of the Directed Study registration are charged the current part-time rate for tuition for those hours in excess of 18, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: Students must register for Directed Studies and Tutorials prior to beginning course work. Registration forms are available in the Office of Registration and Records.

Off-Campus Study

Study Abroad

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering two types of international experiences. The first involves study in an environment which features a foreign language. For example, students may study at Phillips-University, at Marburg/Lahn, Germany; at the University of Strasbourg, Strasbourg, France; at the University of Nancy, Nancy, France; at the University of Barcelona, Barcelona, Spain; and at the University of Azuay, Cuenca, Ecuador. The second type of experience occurs in a setting where knowledge of a second language is not a requirement. Programs of this nature exist at the Dalian Institute of Foreign Languages, Dalian, China; the Cheltenham and Gloucester College of Higher Education, Cheltenham, England; the LaVerne College of Athens, Athens, Greece; and the Hokusei Gakuen University, Sapporo, Japan. Students in the foreign language setting receive intensive language instruction prior to the opening of the university. A wide selection of courses in the social sciences and humanities is available in the BCA programs.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of German 212 and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of French 212 or Spanish 212, outstanding

students who have completed French 211 or Spanish 211 will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country.

The credits earned abroad are transferred toward the degree at Elizabethtown. Students' courses are approved by the Director of Records prior to departure. Interested students should contact Dr. Sharon R. Trachte, BCA Program Coordinator, for information and should confer with their major advisor.

Joint Institution Programs

In these programs, students study at the College and at affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: pre-forestry with Duke University; pre-engineering with Pennsylvania State University; biology health professions and pre-allied health with Thomas Jefferson University.

In the **Pre-forestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Pre-engineering is a 3-2 program with Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of work in an engineering field, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from Pennsylvania State University. For further details, see the description in the Department of Physics listing.

The Biology Health Professions major is a 3-2 program with Thomas Jefferson University College of Allied Health Sciences. The student spends three years at the College; after a year at Thomas Jefferson, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional upper division program results in the awarding of a bachelor of science degree from Thomas Jefferson University. For further details, consult the Department of Biology listing.

In the **Pre-allied Health programs**, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Department of Biology listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students' education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Fine and Performing Arts, Chemistry, Occupational Therapy, and Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the Director of Records or department chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- a. All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- b. Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or higher on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in progress at the time of the examination.
- c. For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Three of

these credits may be applied to the Core Program requirements in Natural World.

- d. For the examinations in Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the Core Program.
- e. For the English Composition and Mathematics Examinations, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the Core Program.

2. *Subject Examinations*

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty.

There are two types of Challenge Tests:

1. **Tests for Academic Credit** are *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option as are Freshman Seminar and Junior/Senior Colloquium in the Core Program.
2. **Tests for Placement and/or Waiver** comprise tests such as those given for placement in modern languages or mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Challenge Tests given at the initiative of the College are administered without fee to the student. There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a Test for Academic Credit is \$75; the fee for a Test for Placement and/or Waiver is \$50. In addition, appropriate tuition is charged for academic credit awarded as a result of Challenge Tests; the charge is 50% of the appropriate part-time tuition rate in effect at the time the test is administered.

Placement Testing

During the summer orientation program all new students

take a mathematics placement test. In addition, students with two, three, four or five years of high school language must take the appropriate modern language placement test. Students with fewer than two full years are not required to be tested. Students who have never studied a language before do not take this test. The languages tested are French, German and Spanish. If students have studied more than one of these languages, they take the placement test in the language which they have had the most intensive study or the language in which they wish to pursue further at the college level.

Students who wish to use a modern language to fulfill the Foreign Cultures and International Studies Area of Understanding in the Core Program complete either Modern Language 112 or 211 or 212. Language background and placement test results determine the appropriate level of college language study (112, 211 or 212). Students who demonstrate competence at the 111 level enroll in 112. Students who demonstrate competence at the 112 level enroll in 211. If competence is demonstrated at the 211 level, the appropriate course is 212.

The mathematics placement test determines placement in Math 011, Intermediate Algebra, or a 100 level mathematics analysis course. Students placed in Math 011 must successfully complete this course before enrolling in other mathematics or mathematics analysis courses.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the Core Program, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Academic Advising

Each student who is enrolled in a degree program is required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors, and minors. (Certain non-degree students are also assigned advisors.)

Freshman Advising Program. The Freshman Advising Program is designed to touch on all aspects of the freshman experience. The goal is to assist freshmen in realizing the maximum educational benefits available to them by helping them to better understand themselves and to learn to use the resources of the College to meet their special educational needs and aspirations. Course selection is included but is not the primary task to be accomplished.

Upperclassman Advising. Upperclassmen who have declared a major are assigned an academic advisor from their major department. Upperclassmen who have not yet

declared a major are assigned an advisor from the Personal and Career Counseling Service.

All advisors work closely with students during the preregistration period for course selection for the coming semester. Consultation with the advisor also occurs during the schedule change period and the drop-add period at the beginning of each semester. Departmental advisors also provide assistance in regard to graduate or professional school and/or career planning.

Student Responsibilities

Students are required to consult with their major advisors as to course selection, course sequences, graduation requirements, etc. (Consultation with the second major or minor advisor is an expectation but not a requirement.) Preregistration Course Request Sheets, Request for Schedule Change forms, and Drop and Add forms require the major advisor's signature, as do certain other forms and documents from the Office of Registration and Records.

The advisor's signature on various documents indicates that the student has consulted with the advisor; *however, it is the student's responsibility to ensure that all graduation requirements have been met and that other requirements, regulations, or deadlines have been observed.*

Advising sheets for academic majors and minors are available in the Office of Registration and Records. For students to use in noting the completion of program requirements.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors and minors. Students are expected to consult with these advisors in regard to course selection, course sequence, and graduation requirements.

Declarations and changes of majors and minors are facilitated in the Personal and Career Counseling Service. When a change of major or minor occurs, records are transferred from one department to another; however, the student must initiate the change.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported in writing to the Office of Registration and Records immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Changes of name, social security number, or sex, require legal documentation to adjust all College records.

Full-time/Part time Status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking fewer than 12 hours per semester pays the regular semester hour rate plus applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credit hours per semester to be eligible for intercollegiate athletic competition.

Course Load

Since the completion of at least 125 or 128 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of approximately 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

Approval by the Associate Dean of the Faculty is required for all overload credit hours. An additional fee is charged for each semester hour above 18 for which a student is enrolled in a given semester. Students who wish to petition for an overload should obtain the appropriate form in the Office of Registration and Records.

Students completing the "New Core" program may carry up to 17 semester hours of work in a semester or nine semester hours in a seven-week summer session. Such students desiring to take credits in excess of these limits must have achieved a cumulative grade point average of 2.7 and have the approval of the Associate Dean of the Faculty and Registrar. The maximum credit load for these students is 19 semester hours in a semester or 10 semester hours of credit in a seven-week summer session.

A student completing the "Old Core" program may carry up to 18 semester hours of work in any given semester except the summer session when the maximum is nine semester hours for the seven-week period. Such a student who has achieved a cumulative grade point average of 3.0 or above may petition to carry up to 20 semester hours of credit in a semester, or 10 semester hours of credit in the summer session. Approval of the Associate Dean of the Faculty and Registrar is required.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Office of Registration and Records. Failure to do so will result in a duplication of hours carried, a possible delay in

graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated are as follows:

1. A student may repeat any course in which the student receives an *F* or *NP*.
2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's advisor and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a *course that is prerequisite to a Core Program requirement*. The student must repeat the course in which the *D* grade was received within one year of the original enrollment in the class (or the next semester in which the course is offered if the course is offered less frequently than once a year).
3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit are determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Office of Registration and Records. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C- or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior* to enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may

transfer credits from four-year institutions, but only upon the prior approval of the Director of Records. Students must request that the Registrar's Office of the transferring institution send an official transcript to the Office of Registration and Records at Elizabethtown College. Facsimile (fax) copies and student delivered transcripts will not be accepted.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Office of Registration and Records, in person or by mail, at least one week prior to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/professional schools or for employment. Two copies of the final record are also available free to each student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Office of Registration and Records at least one week prior to the date needed. Federal law requires that all requests must be made **in writing by the student**. Neither telephone requests nor facsimile (fax) requests can be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Office of Registration and Records; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.
2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.
5. The \$2.00 fee, if applicable.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Elizabethtown College does not send or accept facsimile (fax) copies of transcripts.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a non-degree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is no guarantee that a student will be registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit for the next semester. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the advisor. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of The Center for Continuing Education for details about registration.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Office of Registration and Records.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds must be approved by the academic advisor and completed through the Office of Registration and Records. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; the course drop is not complete until this is done.

Class Absences and Withdrawal Policy

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor or the College may dismiss a student from a course for excessive absences. Such dismissals in weeks 1-4 of the semester result in removal of the course from the student's record; after the fourth week, a grade of W/F is recorded for the course. A student may appeal to the Academic Standing Committee for reinstatement to the course.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Long-Term Absences

Long-term absences from all courses/campus may result in mandatory withdrawal from the College. After 15 consecutive class days of absence from all classes, a student is considered to have withdrawn from the College. (Students absent for verified medical reasons will be granted a Medical Withdrawal (see below).)

Withdrawal

Withdrawal from Classes

Students withdraw from classes through the Office of Registration and Records. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or W/F. All withdrawals after the end of the eleventh week of the semester receive grades of W/F unless the withdrawal is from College and is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of W/F is calculated into the student's average as though it were an F.

Withdrawal from College

Students who withdraw from the College during a semester also withdraw from all of their classes for that semester. Full-time students withdraw from the College through the Personal and Career Counseling Service; part-time students withdraw through the Office of Registration and Records. Students who withdraw during the semester are expected to leave the campus as of the effective date of their withdrawal.

For purposes of billing, room reservation, academic responsibility, etc., the effective date of withdrawal is the date on which the completed official notice is returned to the Personal and Career Counseling Service or the Office of Registration and Records. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical Withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstances. Medical Withdrawal assumes an incapacity that prohibits acceptable academic performance, not simply a hardship or inconvenience. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Medical Withdrawal is withdrawal from the College and, therefore, from all courses. A student does not selectively withdraw from individual courses under the rubric of "medical withdrawal."

Readmission

Students who leave the College in academic good standing (minimum 2.0 cumulative grade point average) must contact the Admissions Office for readmission. Students who leave the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission (see page 13).

Leave of Absence

A student may take a leave of absence from the College to study in an approved off-campus program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Administrative fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$100 deposit must be returned to the Office of Registration and Records by May 1 or December 1 to ensure a place in the College and in courses.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	No-Pass (failure)
AUD	Audit

Quality Points

A 4 point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester
	Hour of Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Grade Point Average Calculation

The grade point average is dependent upon the credit hours attempted and the quality points earned. To determine the grade point average for a semester, multiply the credit hours for each course by the quality points for the grade earned in the course, sum the quality points for the semester, and divide the total quality points by the total credits attempted for the semester. Courses in which a

grade F or WF is received are included in the calculation. Courses in which a grade of W or I is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester GPA. For the major or minor GPA, use all courses that could fulfill a requirement for the major or minor. The same applies to second majors and to second minors.

Incomplete Grades

A grade of "I" may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of "I" are assigned for *extenuating circumstances* only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the "I" in cases of suspected academic dishonesty.

All grades of "I" received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of "F".

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their Physical Well Being courses on a pass/no pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).
2. The cumulative average must be 2.75 or higher.
3. The selected course may carry no more than four semester hours of credit and **must be a free elective**. It must be outside the major or minor department, may not satisfy a Core Program requirement, and may not be a course required by the major or minor.
4. No more than four courses in total (excluding Physical Well Being) may be taken under this grading option.

Pass/No Pass registration forms are available in the Office of Registration and Records. Once a course is registered under the Pass/ No Pass option, it may not be changed. Grades of D- or higher are recorded as Pass; grades of F are recorded as No-Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying D or F grades in 100 or 200-level courses at the end of the fifth week of the semester are notified of their deficient performance.

Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits, a junior; with 90 credits, a senior.

Rank in Class

The student's rank in class at graduation is based on the credits, grades, and quality points earned at Elizabethtown College.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

Semester hours		Cumulative
Attempted	with	Grade Point Average below:
1 - 18		1.70
19 - 36		1.80
37 - 54		1.90
55 - 72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses or seven semester hours.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is experiencing academic difficulty. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student

in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence from the College of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the Registrar.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the Provost, who will direct warranted appeals to the Academic Standing Committee.

Academic Honors

Dean's List

A full-time student who earns a semester grade point average of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

A College Scholar is a currently enrolled student who, having completed at least 60 credit hours at the College, has achieved a cumulative grade point average of 3.75 or higher. Scholars are identified at the end of the spring term, and are publically recognized at the Convocation at the beginning of the following academic year. They are awarded a certificate and their status as College Scholar is recorded on their permanent record.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative grade point average of 3.50 is graduated *cum laude*; an average of 3.75, *magna cum laude*; an average of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria include, but are not limited to, the following: the student must have a minimum G.P.A. of 3.5 in the major/minor and overall cumulative G.P.A.; possess outstanding abilities in areas such as research projects or papers, etc., and have pursued academically rigorous courses in the discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's List of Honor Students during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis without registration or credit.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work may participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed on the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit internship.

Credit Requirements

To receive a Bachelor of Arts or Bachelor of Science degree from Elizabethtown College, the student must earn a minimum of 125 or 128 semester hours of credit. (Ma 011, En 011, and ESL 112 are not counted toward this credit hour graduation requirement.) Students who enter the College in the fall of 1990, or subsequently, are required to complete at least 125 semester hours of credit,

including the Core Program (New Core). Students who entered prior to the fall of 1990 must complete the at least 128 semester hours of credit, including the General Education Core (Old Core). In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the program outline (see departmental listings for specific information).

No more than one degree is ever awarded by Elizabethtown College. Students may have more than one major or minor, or may complete certification subsequent to graduation.

Program Requirements

Students are required to complete successfully all requirements of the major and all of the Core Program requirements. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a grade point average of at least 2.0, with a minimum average of 2.0 in a major (and a 2.0 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have an average of at least 2.0 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in the major, at least eight of which are at the upper level (normally 300 and 400 level), 2) at least 30 of the last 60 credits, and 3) the Junior/Senior Colloquium and at least one 200 level Core Program course.

To recognize completion of a minor on the transcript, a student must complete at least nine credits of the requirements on the Elizabethtown College campus, and must have earned a baccalaureate degree at Elizabethtown College.

Note: Credits earned at the University Center in Harrisburg or in the Brethren Colleges Abroad program while the student is matriculated at the College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the catalog dated four years prior to graduation, or, for major requirements, by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or, for major requirements, the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine require-

ments for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the Registrar by February 15.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature are assumed by the Academic Standing Committee and the Academic Review Committee.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Personal and Career Counseling Service, who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Committee is comprised of three faculty members, two students, and one administrator appointed by the president. The provost serves as convener of the committee but is not a member and does not vote in decisions made by the committee. The committee handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard to Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments.

With Regard to Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.
2. To request a hearing before the Academic Review Committee when found by a faculty member to be in violation of the standards of academic integrity and to

receive a written statement from that board summarizing the findings of the board and its disposition of the matter.

3. To request a hearing before the Academic Standing Committee when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.

4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably.

Students entering in fall of 1991 or subsequent semesters are asked to adhere to the Code of Integrity adopted by both the Student Senate and the Faculty Assembly.

CODE OF INTEGRITY

Elizabethtown College is a community engaged in a living and learning experience, the foundation of which is mutual trust and respect.

Therefore, we promise to represent as our work only that which is indeed our own, and we will strive to behave toward one another with civility and with respect for the rights of others.

Reflecting the Code of Integrity as adopted by both the Faculty and Students of Elizabethtown College, we pledge to refrain from all forms of lying, plagiarizing, and cheating. In recognition of this promise, on selected assignments we will sign a pledge stating: "I have neither given nor received unauthorized aid on this work."

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of course assignments as well.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information when such information is not appropriate. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of F in the course and/or possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

Instances Involving Coursework:

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.

2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have a faculty member, another student, or a member of the Personal and Career Counseling Service present as an observer.

3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A copy of this notification is sent to the Office of the Provost. Should the department chair not be in agreement with the faculty member, and the matter not be resolved at the department level, both the faculty member and the department chair will give written notification, with rationale, to the Provost. The Provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.

4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Committee. The request for a hearing must be presented in writing to the Provost within five days of receipt of the notice of information.

5. The Provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is the Provost's judgment that academic dismissal is appropriate, the Provost will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.

6. The student will have the option of accepting the Provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the

Academic Standing Committee within five days of receipt of the Provost's decision.

Other Instances:

All forms of dishonesty in academic matters are violations of the Standards of Academic Integrity and are the concern of the Academic Review Committee. Inappropriate actions, for example, lying to College officials or forgery of advisors' signatures, are violations equivalent to cheating and plagiarism in coursework. Such dishonesty will be dealt with following the general procedures set forth above. Cases are reviewed individually and according to the circumstances of the violation; however, possible penalties include suspension or dismissal from the College.

Grade Appeals

Questions concerning grades should be called to the attention of the professor immediately after the official grade report is received from the Office of Registration and Records.

Procedures For Grade Appeals

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.
2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal. A request for the meeting must be submitted within thirty days of the date on which the grades are formally issued from the Office of Registration and Records.
3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision. Should the faculty member and the department chair not be in agreement, and the matter not be resolved at the department level, both the faculty member and the department chair will give written statements to the Provost explaining the reasons for upholding or altering the grade. The Provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.
4. The student will have the alternative, within ten days of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the Provost.
5. The Provost will review the detail of the appeal. The Academic Review Committee will hear warranted appeals as determined by the Provost.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the University Center, 2986 N. Second St., Harrisburg, PA 17110.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisors to develop individualized study plans leading to Bachelor of Professional Studies or Bachelor of Liberal Studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to satisfy the external degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September, 1991, the speaker was Jacob Neusner, graduate research professor of religious studies, University of South Florida.

Other speakers have been Carlos Fuentes, the noted Mexican writer, statesman and scholar (1990); Wallace T. MacCaffrey, Harvard University scholar and authority on British history of the 16th and 17th centuries (1989); and the Reverend William Sloane Coffin, president of SANE/FREEZE, Washington, D.C. (1988).

Lecture Series

Two lectures are sponsored at Elizabethtown College which national and international leaders speak on political, ethical, social, and economic topics of major importance.

The lectures are:

The Frank S. Carper Lecture on Ethics, Business and the Professions is an endowed lectureship named

in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The 1991 Carper Lecturer was the Reverend Andrew M. Greeley, writer, novelist, poet, journalist, and professor of sociology at the University of Arizona.

Previous lecturers were Michael Novak, director of social and political studies, American Institute for Public Policy Research, Washington, D.C. (1989); and James O. Pickard, Secretary of Commerce in Pennsylvania from 1982-86 and the chief executive officer of Globus Group, Inc., York, Pa. (1988).

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in honor of the late John F. Chubb, Class of 1961, who was a trustee of Elizabethtown College and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown, Pennsylvania.

The 1991 Chubb Lecturer was Rozanne L. Ridgway, president of the Atlantic Council of the United States and former ambassador to the German Democratic Republic and to the Republic of Finland.

Previous lecturers were W. Michael Blumenthal, chairman and chief executive officer of UNISYS and the U.S. Secretary of the Treasury from 1977-79 (1989); and the Honorable Willy Brandt, chancellor of the Federal Republic of Germany from 1969-74 and the recipient of the Nobel Prize for Peace in 1971 (1988).

College Assembly

The College Assembly is a dedicated period on Wednesday morning at 10:00 a.m. throughout the academic year. The Assembly consists of a series of diverse programs designed to enhance cultural awareness and to provide a forum for discussion of issues of common concern to the College community.



Quiet moments with J.G. Francis.

Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text; the reader is referred to the appropriate department.

Accounting

See Department of Business, page 21.

Anthropology

See Department of Sociology and Anthropology, page 62.

Department of Biology

Professors Dively, Heckman, Hoffman
Associate Professors Laughlin (*Chair*), Polanowski
Assistant Professor McCormick

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The department involves students in research studies with professors through senior seminars and independent study projects.

The Biology Department offers two majors:

Bachelor of Science in Biology. The curriculum prepares students for the rigors of graduate school, professional schools of medicine and allied health, and for biologically-oriented employment opportunities.

Bachelor of Science in Environmental Science. The curriculum prepares students for entry-level positions with environmental firms, industry or government agencies which require a knowledge of environmental principles and methodology as well as for entry into graduate

environmental programs. In addition to providing the student with a solid grounding in basic principles, they are exposed to the application of those principles in an intern program.

Biology

The Bachelor of Science: Biological Sciences Concentration prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 411, 412, and 12 additional hours in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; Mathematics 117 or 121, and 151; and a foreign language through the 112 level or one Computer Science course selected from 115, 120, or 121.

The Bachelor of Science: Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University, or another accredited, pre-approved program. The specific requirements are Biology 111, 112, 201, 202, 202L, and eight additional hours in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 117 or 121 and 151; and Computer Science 120. In addition, nursing students must take Communications 301 and Physical Therapy students must take English 185 or 282; and a business elective. In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University (three years for Physical Therapy) in Philadelphia (or another accredited, pre-approved program). After completing sufficient credits, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University (or another accredited college or university) will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, 411, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Secondary Education Concentration prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the biology major (see above). This major pro-

gram provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, one course selected from 321 or 324-324L, and two additional courses in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; one course in Earth Science; Mathematics 117 or 121, and 151; Education 205, 230, 305, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

Environmental Science

Three concentrations are available:

Environmental Toxicology Concentration is for the student interested in investigating the chemical and biological systems which influence the movement of contaminants through biological systems and their effects in the environment. In addition to the universal requirements (below), students are required to take Biology 215, 215L, 317, 324, and 324L. Suggested electives are Chemistry 323 and 324; Political Science 366; Business Administration 330; and either Computer Science 115 or 120.

Environmental Resource Management Concentration is for the student interested in application of ecological theory to the management of terrestrial and aquatic ecosystems. In addition to the universal requirements (below), students are required to take Biology 215, 215L, 317, 324, and 324L; and Earth Science 112 or 215. Suggested electives are Computer Science 115 or 120; Political Science 366; Business Administration 330; and Economics 101.

Environmental Policy Concentration is for the student interested in examining and evaluating current and proposed environmental policies. In addition to the universal requirements (below), students are required to take Business Administration 330; Economics 101; and Political Science 111 and 366. Suggested electives are Computer Science 120; Economics 102; and Political Science 112.

The universal requirements for the Environmental Science major are Biology 111, 112, 313, 313L, 362, 371, 411, 412, and one course from Biology 235, 331, or 347. Other requirements are Chemistry 113, 114, 213, and 214; Mathematics 117 or 121, and 151; Physics 101; and Political Science 361, and 471 or 476.

A Minor in Biology provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 and 112 or 105-105L and 106-106L or 105-105L and 108-108L or 106-106L and 108-108L; 212 or 215-215L; one course from 201, 222, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 19 or 20, depending on whether Biology 212 is taken. For a minor to be conferred,

a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Hoffman of the Biology Department will work with the student and the student's major advisor.

Cooperative Programs

The Biology Department also offers two programs leading to the receipt of a degree from cooperating institutions.

The Preforestry Program offers a biology concentration in the five year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University for the junior and senior years.* The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs.

Bachelor of Science in General Science Secondary Education is offered through the Biology Department. The curriculum prepares the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further details may be obtained from Dr. Hoffman.

*Physical Therapy requires two years at Elizabethtown College and three years at Thomas Jefferson University.

105* Principles of Biology

3 credits. **(The Natural World and Old Core)** Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *Corequisite: (to satisfy Old Core) Biology 105L. May not be taken for credit after completing Biology 111.* Staff.

105L* Principles of Biology Laboratory

1 credit. **(The Natural World and Old Core)** Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106* Genetics, Evolution, and Man

3 credits. **(The Natural World and Old Core)** Designed for the non-biology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their

significance, and the evolution of man. *Corequisite: (to satisfy Old Core) Biology 106L*. Spring semester. Staff.

106L* Genetics, Evolution, and Man Laboratory

1 credit. **(The Natural World and Old Core)** A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106* Spring semester. Staff.

108* Living With The Environment

4 credits. **(The Natural World and Old Core)** Designed for the non-biology major, a discussion of the basic principles of environmental relationships and how living organisms play a role in those relationships and respond to changes in their environment. Current problems with pollution, hazardous wastes, energy, and population growth are examined in relation to those environmental principles. The lab work includes field trips to a nuclear power plant and waste treatment plants, testing for various environmental contaminants, and exercises in population sampling and measurement of environmental tolerances. *Corequisite (to satisfy Old Core): Biology 108L*. Prof. Laughlin.

108L* Living With The Environment Laboratory

1 credit. **(The Natural World and Old Core)** Includes field trips to water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Corequisite: Biology 108*. Prof. Laughlin.

111* Introduction to Biological Sciences

4 credits. **(The Natural World and Old Core)** The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit without the permission of instructor after completing Biology 105*. Staff.

112 General Biology

4 credits. **(Old Core)** The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology 111*. Spring semester. Staff.

201 Human Anatomy

4 credits. **(Old Core)** A study of human structure at the tissue, organ, and system levels. Particular attention is given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology 111, permission of instructor*. Fall semester. Prof. Dively.

202 Human Physiology

3 credits. **(Old Core)** A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology 111, permission of instructor*. Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. **(Old Core)** A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202*. Spring semester. Staff.

212 Molecular Biology

3 credits. **(Old Core)** An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. **(Old Core)** A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor*. Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit. **(Old Core)** Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215*. Fall semester. Prof. Heckman.

222 Immunology

3 credits. **(Old Core)** A basic course encompassing immunity, serology, immunochemistry and immunobiology. Considered are antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology 112 or permission of instructor*. Spring, alternate years. Prof. Polanowski

235 General Microbiology

4 credits. **(Old Core)** A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 105 or 114, or permission of instructor*. Spring semester. Prof. McCormick.

311 Biological Instrumentation and Research Methodology

4 credits. **(Old Core)** A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry*. Fall semester. Prof. McCormick.

313 General Ecology

3 credits. **(Old Core)** The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor*. Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. **(Old Core)** Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313*. Fall semester. Prof. Laughlin.

317 Aquatic Biology

4 credits. The study of physical, chemical, and biological relationships in aquatic ecosystems as they relate to the survival and growth of organisms. The course will include laboratory and field experimentation using local aquatic ecosystems. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry*. Fall semester. Prof. McCormick.

321 Plant Physiology

4 credits. **(Old Core)** A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 105 or 114; or permission of instructor*. Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. **(Old Core)** A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor*. Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. **(Old Core)** An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. **(Old Core)** A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. **(Old Core)** Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. **(Old Core)** A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Prof. Dively.

342 Development and Evolution

3 credits **(Old Core)** A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215, 215L.* Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. **(Old Core)** A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. **(Old Core)** A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of the instructor.* Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. **(Old Core)** A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114.* Offered on demand. Staff.

362 Ecotoxicology

4 credits. An overview of contemporary issues in environmental science including the measurement of the ecological effects and fate of pollutants, environmental monitoring to detect ecosystem deterioration, the emerging discipline of restoration ecology, and related social and economic issues. The course will include laboratory and field experimentation and field trips. *Prerequisites: 15 credit hours of biology and 8 credit hours of chemistry.* Spring semester. Prof. McCormick.

370-379 Special Topics in Biology

Variable credit. **(Old Core)** Courses of a specialized nature reflecting the interests of the student and the instructor. Courses offered on a random basis. Staff.

371 Environmental Issues Seminar

1 credit. A multidisciplinary approach to current issues in environmental science. Topics of discussion will include the assessment of environmental risk, the development and implementation of environmental regula-

tions, ecological economics and sustainable resource use, and the emergence of global environmental awareness. Students will be required to write a position paper on an issue of their choice. *Prerequisite: at least junior standing.* Fall semester. Prof. McCormick.

411-412 Seminar in Biology

0 and 2 credits, respectively. **(Old Core)** An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311.* Staff.

481-489 Independent Study

Variable credit. **(Old Core)** Designed to allow the student to do independent research in some phase of biology. *Prerequisites: 16 credits in biology, permission of the instructor and Department Chair.* Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Education 230.* Fall, alternate years. Prof. Hoffman.

Department of Business

Professors Buffenmyer, C. Kreider
Associate Professors Evans, Gliptis, Hoppie, Meoli, Neyer,
Pomroy, Stone (*Chair*), Trostle
Assistant Professors S. Dolan (*Associate Chair*), Hill,
Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations. The department's goal is to provide students with an understanding of economic and business systems within the global economy and a multi-cultural society, and to provide them with a foundation for pursuing a career, graduate study, and continuing self-education in a business area.

The Department of Business offers three majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the Core Program, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrat-

ing in one or more of six areas: *accounting, computer science/ business information systems, economics, finance, management, or marketing*. A student may also select a secondary area of concentration in *communications* or *international business*.

Business administration students may also major in forestry and environmental management. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Arts in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. In consultation with the department advisor, the elective courses should be tailored to the student's area of interest.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 101, BA 265, BA 330, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Students interested in business and technology are advised to read the description of the Industrial Engineering major offered by the Department of Physics.

Accounting

A major in accounting includes Accounting 105, 106 (Ac 107-108 may be substituted), 205, 206, 207, 301, 305, 9 additional semester hours in accounting; Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120; Economics 101, 102; Mathematics 151. No more than 75 credits may be taken in courses offered by the Department of Business.

Business Administration

A major in business administration includes Accounting 107, 108, (Ac 105-106 may be substituted); Business

Administration 215, 248, 265, 325, 330, 355, 495; Computer Science 120; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration. No more than 75 credits may be taken in courses offered by the Department of Business.

For an *Accounting Concentration*, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A *Computer Science/Business Information Systems Concentration* requires Computer Science 121, 135, 335, 340. An *Economics Concentration* requires Economics 301, 302, and two other economics courses from the departmental advising sheet. A *Finance Concentration* requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The *Management Concentration* requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 319, 416, and two other marketing courses from the departmental advising sheet.

A *Secondary Concentration in International Business* requires competency in a modern language at the 112 level; Anthropology 111 or Business Administration 251; Political Science 245; Economics 307 or 311 or 372; and two other courses from the departmental advising sheet. A *Secondary Concentration in Communications* requires Communications 105, English 185, and three other courses from the departmental advising sheet.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics: Computer Science 120, Mathematics 121, 151, and 252; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may not enroll in Accounting 107 or 108 unless the faculty specifically allows them to do so. Likewise, students who complete 107 may not enroll in 105 or 106. The proper course sequence is either 105-106, or 107-108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite:* Accounting 105. Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite: Accounting 107.* Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite: Accounting 106 or permission of the instructor.* Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite: Accounting 205.* Spring semester. Prof. Neyer.

207 Intermediate Accounting III

3 credits. A continuation of the study of theories and concepts used in the preparation of general purpose financial statements on a special topics basis. This course will concentrate on earnings per share, accounting for income taxes, leases, income presentation, and other topics of a specialized nature. *Prerequisite: Accounting 206.* Prof. Neyer.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites: Accounting 301, 206 or permission of the instructor.* Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite: Accounting 106 or 108; or permission of the instructor.* Fall semester. Prof. Neyer.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite: Accounting 305.* Spring semester. Prof. Neyer.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite: Accounting 106 or 108.* Spring semester. Prof. Neyer.

371-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods

and procedures used in gathering evidential material, and the auditor's report. *Prerequisite: Accounting 206.* Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite: Accounting 206.* Fall semester. Prof. Pomroy.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites: Accounting 302, 405, 406; or permission of the instructor.* Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite: approval of the department chair.*

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites: approval of the department chair and the Provost.*

Business Administration

111 Document Processing I

3 credits. A brief introduction to keyboarding with a greater emphasis upon formatting techniques utilizing the microcomputer and a word processing software application. Prof. C. Kreider.

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. Prof. Hill.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business: includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisite: Mathematics 151.* Profs. Beyerlein, Stone, Trostle.

251* Cross Cultural Understanding

3 credits. **(Foreign Cultures and International Studies)** An interdisciplinary study of the political, social, and economic environment of foreign cultures. Focuses on understanding the differences between foreign cultures and our own culture and on developing the interaction necessary to function effectively in the global community. Prof. Buffenmyer.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites: Business Administration 215 Mathematics 151.* Spring semester. Prof. Hill.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisites: Business Administration 215 and 319.* Fall semester. Prof. Meoli.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites: Business Administration 215, 265.* Fall semester. Prof. Meoli.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite: Business Administration 215.* Fall semester. Prof. Buffenmyer.

319 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during, and after, a purchase. Emphasis is on understanding and predicting the individuals consumption patterns so that effective marketing strategies can be developed. *Prerequisite: Psychology 105.* Fall semester. Prof. Meoli.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite: Accounting 106 or 108.* Prof. Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of the instructor.* Spring semester. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Prof. C. Kreider.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites: Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

371-379 Special Topics

3 credits. Topics and problems of current relevance in business.

371 International Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite: Business Administration 265.* Prof. Buffenmyer.

374 Organizational Marketing

3 credits. An examination of the marketing of goods and services between businesses, institutions, and government with special emphasis on organizational buying, behavior, relationship management and promotional tools necessary to reach organizational customers. Prof. Hill.

376 Decision Making for the Public Sector

3 credits. A study of the various quantitative tools which will aid persons in public administration to quantify public policy concerns. Modeling techniques to be covered include cost-benefit analysis, forecasting, pricing, cost effectiveness analysis. Examples of the public concerns to be covered are the quality of public hospital services, public education services, and public health programs. *Prerequisites: Mathematics 151, and/or Business Administration 248.* Prof. Beyerlein.

416 Marketing Management

3 credits. Integrating marketing theories and concepts for strategic planning and implementation. Case method emphasized. *Prerequisites: Business Administration 215, 248, 265, and 319.* Spring semester. Profs. Hill, Meoli.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite: Business Administration 325.* Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite: Business Administration 325.* Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites: Business Administration 248, 369; Economics 102.* Spring semester. Prof. Stone.

467 Human Resource Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite: Business Administration 265.* Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite: Business Administration 369 or permission of the instructor.* Fall semester. Prof. Muston.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite: approval of department chair.* Prof. Buffenmyer.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites: approval of the department chair and the Provost.*

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise.

Prerequisite: senior status. Prof. Muston.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites:* Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor. Prof. Hill.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites:* Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor. Profs. Buffenmyer, Muston.

Economics

101 Principles of Economics I

3 credits. (Old Core) The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. Does not fulfill Core requirement for students majoring in the business department. Profs. Evans, Hoppie, Trostle.

102 Principles of Economics II

3 credits. (Old Core) Topics include elasticity, consumer behavior, production costs, market structures (competition, oligopoly, monopoly), and resource pricing. Does not fulfill Core requirement for students majoring in the business department. Profs. Evans, Hoppie.

203* The Greatest Economic Mystery Series

3 credits. (Social World) Through a series of four mystery novels, the authors weave important lessons of economics into an entertaining story of intrigue and deception. This combination of ingenious story line and important issues of macroeconomics and public affairs should provide a truly different experience for all students. Prof. Evans.

301 Intermediate Microeconomic Theory

3 credits. (Old Core) An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites:* Economics 101, 102; Mathematics 117 or 121. Fall semester, even-numbered years. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. (Old Core) Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites:* Economics 101, 102; Mathematics 117 or 121. Spring semester, even-numbered years. Prof. Hoppie.

303 Money and Banking

3 credits. (Old Core) A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisite:* Economics 101, or permission of the instructor. Spring semester. Prof. Evans.

304 Public Finance

3 credits. (Old Core) An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisite:* Economics 102. Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. (Old Core) The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Offered on demand. Prof. Hoppie.

307 International Economics

3 credits. (Old Core) The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite:* Economics 101 or permission of instructor. Offered on demand. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. (Old Core) Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite:* Economics 101 or permission of the instructor. Offered on demand. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. (Old Core) An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites:* Economics 101, 102; Mathematics 117 or 121. Offered on demand. Prof. Evans.

311 Economic Development

3 credits. (Old Core) Examination and substantive analysis of the issues, problems, policies, and theoretical underpinnings of economic development in the Third World countries, including newly industrialized countries. The central thesis is growth, modernization and change with particular emphasis on area and country studies. Offered on demand. Prof. Hoppie.

312 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Offered on demand. Prof. Hoppie.

371-379 Special Topics

3 credits. (Old Core) Topics and problems of current relevance in economics.

480-489 Independent Study

Variable credit. (Old Core) Independent study and research on a problem or topic in the field of economics. *Prerequisites:* approval of the department chair and the Provost.

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite:* permission of the instructor. Fall semester. Odd numbered years. Prof. Gliptis.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology Program*), Ranck, Schaeffer (*Chair*), Spangler
Associate Professor Reeder

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their Core Program requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations, and minors in chemistry and biochemistry.

The bachelor of Science in biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Premedical and other health professions programs are discussed on p. 66.

The bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum, the medical technology curriculum, and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harris-

burg), Monmouth Medical Center (Long Branch, N. J.), York Hospital, Lancaster General Hospital, Abington Hospital and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the degree is granted. It is the student's responsibility to keep the Registrar's office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with the Registrar in January of the year of the clinical work.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's advisor and the department chair. Students planning much work in chemistry should consult with a departmental advisor as early as possible to plan the sequence of courses in chemistry, mathematics, physics, and biology, which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to ensure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-2, 461-2, 451 or 490 or 496, 491 or 497; Biology 111, 112, 324, 324L; 6 additional hours of biology and 3 hours of biology or chemistry; Computer Science 115; Mathematics 122; and Physics 102.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 346, 343, 344, 352, 361-2, 402, 421, 461-2, 451 or 490 or 496, 491 or 497; Computer Science 115; Mathematics 222; and Physics 102.

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; Biology 111, 112, 222, and 235, and electives to total a minimum of 16 semester hours; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus Core Program and electives must total 100 semester hours. The clinical year includes a minimum of 28 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, 490 or 496 or 451, 491 or 497; Mathematics 122; Physics 102; and two additional courses in biology or chemistry.

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, and one

additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; and Education 205, 230, 305, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see page 68.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 346, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 346, 352, 361-2, 461-2, 490 or 496 or 451; Computer Science 115; Mathematics 222; Physics 202; and a minimum of three courses from the following: Chemistry 402, 421, 491 or 497; Mathematics 362; or any 300-400 level Physics courses.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of advanced chemistry as approved by the department faculty.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

101* General Chemistry: Practical Principles

4 credits. **(The Natural World and Old Core)** An introduction to the study of the material world from a phenomenological, measurable, and observable viewpoint. Topics include elements and compounds, weight relationships, states of matter, solutions, descriptive reactivity, reaction energetics, solution equilibria, and organic and biochemical structure and nomenclature. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra.* Fall, spring semesters. Profs. Reeder, Schaeffer.

105* General Chemistry: Theoretical Principles

4 credits. **(The Natural World and Old Core)** An introduction to the study of the material world from a conceptual, model building viewpoint. Topics include elements and compounds, atomic composition and electronic structure, bonding and molecular structure, physical properties, thermodynamics, and reaction kinetics. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra.* Spring semester. Prof. Schaeffer.

113* Organic Chemistry I

4 credits. **(The Natural World and Old Core)** The first course for those students who plan to take more than one year of chemistry. Topics include formulas, stoichiometry, bonding, geometry, equilibrium, reactivity, kinetics, and instrumentation applied to carbon compounds. The importance of organic compounds across disciplines and in everyday life will be emphasized. Hours: lecture 2, discussion 1, laboratory 3. *Prerequisites: high school chemistry and algebra or equivalent.* Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. **(Old Core)** A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite: Chemistry 113.* Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or*

corequisite: Chemistry 114; permission of instructor. Spring semester. Prof. Proctor.

213 Analytical Chemistry I

4 credits. **(Old Core)** Quantitative analysis emphasizing classical inorganic, gravimetric, and volumetric methods. Hours: lecture 2, laboratory 6. *Prerequisite: Chemistry 114 or equivalent.* Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. **(Old Core)** A continuation of Chemistry 213, with added emphasis on instrumental methods and computer applications. Hours: lecture 3, laboratory 6. *Prerequisite: Chemistry 213 or equivalent.* Spring semester. Prof. Hedrick.

242 Chemical Equilibrium and Kinetics

3 credits. **(Old Core)** Thermodynamics as applied to chemical equilibria in ideal and nonideal, homogeneous, and heterogeneous systems. Kinetics, ionic solutions, and electrochemistry are also treated. *Prerequisites or corequisites: Chemistry 214, Mathematics 122, Physics 102.* Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. **(Old Core)** The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites: Chemistry 213 and Biology 112 or equivalent.* Fall semester. Prof. Spangler.

324 Biochemistry II

3 credits. **(Old Core)** A continuation of Chemistry 323. *Prerequisite: Chemistry 323.* Spring semester. Prof. Spangler.

326 Techniques of Biochemistry I

1 credit. **(Old Core)** Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite: Chemistry 323.* Fall semester. Prof. Spangler.

327 Techniques of Biochemistry II

1 credit. **(Old Core)** A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite: Chemistry 326; corequisite: Chemistry 324.* Spring semester. Prof. Spangler.

343 Atomic Structure (Physics 221)

3 credits. **(Old Core)** Twentieth-century developments in the structure of the atom. Topics include X-rays, radioactivity, atomic spectra, blackbody radiation, introduction to quantum theory emphasizing the extranuclear structure of the atom, elementary particles, nuclear structure, and transformations. This course is the same as Physics 221. Hours: lecture 3. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. **(Old Core)** An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite: Chemistry 343.* Spring semester. Prof. Ranck.

346 Atomic Structure Laboratory (Physics 221L)

2 credits. **(Old Core)** Experiments relating to the atomic nature of matter and the interaction of radiation with matter. Introduction to special computational techniques appropriate for the experiments. Hours: laboratory 6. *Corequisite: Chemistry 343.* Fall semester. Prof. Ranck.

352 Advanced Chemistry Laboratory I

3 credits. **(Old Core)** Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite: Chemistry 344.* Spring semester. Prof. Ranck.

361, 362 Chemistry Seminar I, II

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 362. Hours: seminar 1 (Fall), seminar 1 (Spring). Prof. Schaeffer.

371-379 Special Topics in Chemistry

Variable credit. (Old Core) Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites: permission of instructor and department chair.* Staff.

402 Advanced Inorganic Chemistry

3 credits. (Old Core) A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite: Chemistry 344.* Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. (Old Core) A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite: Chemistry 344.* Fall semester. Prof. Spangler.

451 Advanced Chemistry Laboratory II

4 credits. (Old Core) Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite: Chemistry 242.* Fall semester. Prof. Schaeffer.

461, 462 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 462. Hours: seminar 1 (Fall); seminar 1 (Spring). Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control.

Clinical Chemistry—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

490-495 Research in Chemistry

Variable credit. (Old Core) An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor.* Staff.

496-499 Independent Problems in Chemistry

Variable credit. (Old Core) An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor.* Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Education 230.*

Department of Communications

Professor Moore (*Chair*)

Associate Professors Smith, Wennberg

Assistant Professors Dominas, Shaner

Instructor Dye

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the 24-hour local access cable television production facility, ECTV-Channel 40, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, International Association of Business Communicators (Elizabethtown College chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 41 credit hours required for a Bachelor of Arts degree with a *communications major* include Communications

109, 115, 125, 205 (repeated for four semesters), 210, 225, 235, 248, 485; Computer Science 120 (Introduction to Computer Processing for the Macintosh), and 12 credit hours in a concentration. All majors are strongly encouraged to complete a minor area of study chosen in consultation with their advisor. Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of career interest. The minor allows for complementary preparation in another discipline. Prior to preregistration for the junior year, the student must elect a communications concentration which requires 12 credit hours. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student as a designer, producer, and a manager of a variety of internal/external media programs and facilities for business, industry, and other institutions. The student is required to complete Communications 215, 348, and two electives to be chosen from Communications 336, 371, 424, and 471.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are Communications 311, 351, 412, and one elective to be chosen from the following: Communications 215, 314, 316, and 348.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcast and print journalism. Required are Communications 311, 314 or 316, and two electives to be chosen from the following: Communications 215, 314, 316, 321, 336, 348, 422, and 424.

A minor in communications is offered to students majoring in other departments. The minor permits a student to reach a level of competency in written, spoken, and visual communications to complement their primary area of preparation. The 25 credit hours required for a minor in communications include Communications 109, 115, 125, 205 (repeated for two semesters), 225; Computer Science 120 (Introduction to Computer Processing for the Macintosh); and 9 credit hours of approved departmental electives at or above the 200 level.

No more than 57 credits in Communications may be counted toward graduation.

Admission Requirements for Communications Majors and Minors

All students must have a 2.0 GPA to declare the major or minor and enroll in any courses above the 100 level.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or

practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practica often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practica are not repeatable and may count as elective credit within the major. Internship credits count only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 150 opportunities already negotiated with regional communications organizations.

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the College.

105* Fundamentals of Speech

3 credits. (**Power of Language**) An examination of the structures, functions, political, social, and economic impacts of the mass media in the U.S. A goal is to help students become more critical and analytical consumers of the mass media. *Available only to students with English 150 placement level, if course is to be used for Power of Language requirement.* Profs. Dye, Moore.

109 Communications Theory

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on several levels, individual, interpersonal, and mass, examining such aspects as speech production, sender/receiver relationships, listening, nonverbal communication and the use of symbols. Students explore mass media from a human communication perspective. Prof. Ellis.

115* Media and Society

3 credits. (**The Social World**) An examination of the structures, functions, political, social, and economic impacts of mass media in the U.S. A goal is to help make students critical and analytical consumers of the mass media. Profs. Dominas, Dye, Severeid.

125 Introduction to Media Production

3 credits. The course provides the design, theory and development of production skills and techniques for a variety of audio-visual materials, photography, and print materials. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials, including a multi-image presentation. *Pre/corequisite Computer Science 120.* Prof. Wennberg.

205 A—D Applied Communications

.5 credit. Four semesters of participation in approved cocurricular activities is required of all majors. All participants must meet the standards of the activity in order to count toward meeting the requirement. Of the four semesters of participation, three must be in different, approved activities. These include: a. WVEC-FM, b. Forensics, c. *Etownian* and *Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any two activities. A communications major or minor may enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. *Graded Pass/Fail.* Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisites: Communications 105 or 109.* Profs. Dye, Smith.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of desktop publishing are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 (for the Macintosh).* Prof. Wennberg.

225 Audio: Theory and Practice

3 credits. The technical and aesthetic fundamentals of audio field and studio production. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic audio projects. A general overview of the history of radio is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video: Theory and Practice

3 credits. The technical and aesthetic fundamentals of video field and studio production and postproduction. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic video projects. A general overview of the history of broadcast television is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 225.* Prof. Dominas.

248 Communication Law and Ethics

3 credits. An examination of the law of the field of communications as well as its history and effects. Current ethical issues are explored through case studies. *Prerequisite: Communications 115 or permission of instructor.* Prof. Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. Spring semester, odd numbered years. Prof. Dye.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. Spring semester, even numbered years. Prof. Dye.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of the instructor.* Staff.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: For majors: Communications 311 or permission of the instructor. For Professional Writing students: two Professional Writing courses and permission of the instructor.* Spring semester, odd numbered years. Staff.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, editing copy, continuity, and news for radio and television. *Prerequisite: Communications 225, 235, 311, or permission of instructor.* Spring semester. Prof. Dominas.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites: Communications 225 and 235.* Fall semester, even numbered years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites: Communications 235, 205-ECTV (may be a corequisite).* Spring semester. Prof. Dominas.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisites: Communications 125, 225, and 235, or permission of instructor.* Fall semester. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite: Communications 311 or permission of instructor.* Fall semester. Staff.

371-379 Special Topics

Variable credit. Periodic offerings of the Department or directed study in topics of special interest to advanced majors. Staff.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. Periodic offering. Prof. Moore.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual

public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite: Communications 351.* Spring semester. Staff.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisites: Communications 225, 235, 248.* Fall semester, odd numbered years. Staff.

424 Script and Screenwriting

3 credits. The course emphasis will be placed on identifying the tools used in successful, creative writing, and then putting them into practice. The student will become familiar with, through study and practical application, the various visual/audio formats used in dramatic radio, television, and film scripting and writing. Spring semester. Prof. Severeid.

471-479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professionals in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisites: Practicum—at least junior standing; is taken with a campus-based sponsor for elective credit in the major; may not be repeated. Internship—senior standing, at least 12 credits, a 2.70 cumulative GPA and a 3.0 GPA in the major; Must be taken full-time for an entire semester off campus, and used only as free elective.* Prof. Moore.

480-489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites: at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite: senior standing.* Profs. Moore, Wennberg.

Department of Computer Science

Professor C. Kreider
Associate Professors Leap, Tulley (*Chair*)
Assistant Professor Bina
Lecturer Evans

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and under-

standing of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *three majors*—one in *computer science*, one in *computer science/business information systems*, and another in *computer engineering*, which is offered in conjunction with the Department of Physics. All three majors provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 4000 cluster is used primarily for administrative purposes. The VAX 3100 is dedicated to academic use.

The College also has available for student use a variety of micro and personal computers. These include Apple, IBM, and Epson computers. Interconnection between the computers is provided.

The computer science department maintains an Intel 80486/33 based multiuser timesharing computer system running the UNIX operating system. This system is housed in the department's computing laboratory along with a number of other 80386 and 80286 based PC's. All departmental computers are connected to a local area network (LAN) based on ethernet technology. The department also maintains a computer interfacing and electronics design laboratory.

The department strongly recommends that students purchase their own MS DOS-based personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase IBM PC's at excellent prices. Students can also build their own personal computer as part of several computer science courses.

Major software systems available on the computers include most major computer languages (Actor, Ada, BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, Dbase III+, Lotus 1-2-3,

and WordPerfect); and relational data base management systems.

All computer science majors and students enrolled in courses requiring use of the VAX computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses, including Computer Science 121, 122, 221, 222, 332, 341, and 490.

The computer science major is further required to take Computer Science 321, 322, and either 421 or 422, plus nine credits of computer science electives; Mathematics 121, 122, 151, 201, and either 222 or 252; and an area elective which consists of four courses in one area other than computer science. Area elective courses may not be chosen from among those required for or elected to meet Core or international studies requirements and must be approved by the computer science faculty advisor. A minor in another field also satisfies this area elective requirement.

The computer science/business information systems major is further required to take Computer Science 135, 335, 409, and nine credits of computer science electives; Mathematics 117, 151; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The computer engineering major requirements are specified under the Department of Physics.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of an appropriate programming language, data representation, file handling, and the use of subprograms. (Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor). Prof. Reeder.

120 Introduction to Micro Computer Applications

3 credits. An overview of computer concepts, uses, and issues. The personal computer operating system and several software packages (database, desktop publishing, spreadsheet, and word processing) are a major component. Staff.

121* Computer Science I

1 or 3 credits. **(Mathematical Analysis)** The fundamental concepts of computer organization, machine level representation of data, algorithmic development and structured programming are presented with an emphasis on the syntactic and execution characteristics of a structured programming language (currently Pascal) including data types; arithmetic operators and assignment; input/output, selection and iteration structures; elementary data structures; and procedural abstraction. *Prerequisites: high school algebra and/or trigonometry.*

(Students who have successfully completed Computer Science 115 will receive one credit for this course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis, recursion, internal sort and search methods, string processing, fixed and variant record structures, and file handling using a second programming language (currently C) and the UNIX operating system. *Prerequisite: Computer Science 121.* Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Staff.

221 Algorithms and Data Structures

3 credits. The design of algorithms for handling abstract data types including stacks, queues, linked lists and trees is coupled with an introduction to complexity analysis, storage allocation and its management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. Fall semester.

322 Formal Languages

3 credits. A discussion of grammar classifications as a formal description for programming language syntax, finite state machines as acceptors of regular expressions, and the equivalence of push-down automata and context-free grammars and their use in parsing programming languages. *Prerequisites: Computer Science 221, 321.* Spring semester. Prof. Tulley.

332 Computer Organization and Architecture

3 credits. Introduction to Boolean algebra, design of combinational and sequential circuits, and their use in von Neumann computer architecture. Basic parts of computer systems including memory, control and input-output systems are studied. The student is expected to design a simple micro-programmed computer. *Prerequisite: Computer Science 222.* Fall semester. Prof. Bina.

333 Computer Systems Interfacing (Physics 242)

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. *Prerequisite: Computer Science 122.* Spring semester, odd numbered years. Prof. Leap.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite: Computer Science 135.* Prof. Leap.

340 Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, software applications, and

information; and an investigation of information systems of the various functional areas within the organization. *Prerequisites: Computer Science 120 or 121; Business Administration 215, 265* . Spring semester. Prof. Kreider.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisite: Computer Science 122 or 135*. Fall semester. Prof. Evans.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites: Computer Science 221; Mathematics 151; or permission of instructor* . Prof. Tulley.

361 Computer Graphics

3 credits. Overview of the principles of computer graphics including the basis of raster and vector display devices; representation of lines, and curves, two- and three-dimensional scaling; hidden lines and surfaces; and animation techniques involving interactive graphics and the user interface. *Prerequisites: Computer Science 221 and Mathematics 201*. Prof. Bina.

362 Comparison of Programming Languages

3 credits. Comparative study of programming language concepts including data objects and data types, scope, procedures, abstraction mechanisms, sequence control, exception handling and concurrency, providing a framework for understanding language design. Intended to provide the necessary tools for critically evaluating existing and future languages and language constructs. *Prerequisite: Computer Science 221*. Prof. Tulley.

371-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite: permission of instructor*. Staff.

409 Data Base and Information Systems

3 credits. A study of database design and management techniques. Topics include data models (E-R, relational); query languages; data dictionary; implementation of a relational database kernel; file security; and various database implementations (hierarchical, network, relational). *Prerequisites: Computer Science 221 and 341 or permission of instructor*. Spring semester, odd numbered years. Prof. Evans.

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers, interpreters, and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites: Computer Science 222, and either Computer Science 322 or permission of the instructor*. Fall semester, even numbered years. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, device drivers, and interrupt handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites: Computer Science 332*. Fall semester, odd numbered years. Prof. Bina.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite: approval of the computer science faculty*. Prof. Tulley.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite: approval of the computer science faculty and Provost*. Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal with a final report and defense of work. *Prerequisites: senior status or permission of instructor*. Spring semester. Staff.

Earth Science

See Department of Physics, page 54.

Department of Education

Professor Rice
Associate Professors Bartoli, Boothby, Fox
Assistant Professors Bauman, Blue (*Chair*), Toro

Bachelor of Science

The department offers major programs in Early Childhood (N-3) and Elementary Education (K-6) which combine a strong liberal arts education with the development of high professional competence. Supported by the Core Program, the student's minor, and elective coursework, these major programs bring together in a creative way the student, the school, and the subject to be taught. Further, the department stresses the importance of supervised field experiences which complement on-campus courses in education. A dual major in Early Childhood and Elementary Education is also available.

Bachelor of Arts or Bachelor of Science

Programs in Secondary Education are available in selected academic areas (English, Mathematics, Biology, Chemistry, Physics, General Science, and Social Studies). Carefully designed work in the academic or interdisciplinary major, the Core Program, and electives, qualify students for the degree appropriate to that major. A program in Music Education (K-12) is also available (see the Department of Fine and Performing Arts).

Certification

The department and the College act as agents of the Commonwealth in the teacher certification process for those meeting the standards detailed below.

General Requirements of the Programs

Admission to the Programs

- 1. Make written application to the Department of Education after:

- a) Completion of a minimum of 30 credit hours with a G.P.A. of 2.5 or higher
- b) Completion of Education 205 and 230 or 245 (with a minimum grade of C)
2. Submit a TB medical clearance
3. Provide a record of Act 34 clearance
4. Declare a college approved minor (for Early Childhood and Elementary Education majors)
5. Qualify for recommendation by members of the Department of Education and/or the major department(s)
6. Present a portfolio demonstrating interest and/or experience in professional education (may include: above items, letters of recommendation, descriptions of experience, written essay, etc.)

Progress in the Programs

1. Receive no grade lower than C in any course required in the program
2. Receive passing scores from the General Knowledge and Communication Skills tests of the Core Battery of the NTE
3. Maintain a portfolio demonstrating interest and experience in professional education

Note: Students are evaluated at the conclusion of each semester and may be advised to withdraw at any time the department determines such action to be appropriate.

Exit from the Programs

1. For the major:
 - a) Complete all requirements of the major with a G.P.A. of 2.0 or higher
 - b) Complete the College approved minor (Early Childhood and Elementary Education only)
2. For certification:
 - a) Complete all requirements of the program with a G.P.A. of 2.5 or higher
 - b) Earn a grade of C+ or higher in the professional internship
 - c) Complete a College approved minor (Early Childhood and Elementary Education only)
 - d) Receive passing scores on the Professional Knowledge test of the Core Battery and on the Specialty Area test of the NTE
 - e) Receive written recommendation by members of the Department of Education and/or the major department(s)
 - f) Present a portfolio summarizing one's activities and experiences in professional education (may include: evaluations, sample lessons or units, resume, references, videotape(s), etc.)
 - g) Show evidence of a valid TB and Act 34 clearance
 - h) Complete application for certification

Special Requirements of the Programs

Students in the *Elementary Education Program* must complete Education 205, 245, 250, 265, 325, 335, 345, 355, 365, 385, and 472; complete studies in American History, Geography, Economics, Life Science, and Mathematics

(maximum of 16 credits); and complete a College approved minor.

Students in the *Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 471; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Dual Elementary and Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 474; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Secondary Education Program* must complete an academic or interdisciplinary major as outlined by an area which supports a certification program; complete Education 205, 230, 305, 415, and 473; and satisfactorily complete all other program requirements.

205 Foundations of Education

3 credits. A study of the historical, philosophical, sociological, and political foundations of education. Emphasis is on critical understanding of educational thought and practice in order to identify, interpret, and search for resolution of educational controversies and problems.

230 Analysis of Instruction

4 credits. A study of factors underlying and supporting the teaching and learning process. Topics include: human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, social learning, instructional design and management, and media and technology. Field experience required. *Prerequisite: Education 205.*

245 Teaching and Learning Processes

3 credits. A study of factors underlying teaching and learning processes, including human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, and context-specific analysis. Requires field experience.

250 Foundations of Literacy

3 credits. A study of emergent literacy and strategies for teaching beginning reading in an integrated language arts curriculum. Includes an introduction to children's literature. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 265.*

265 Instructional Media and Technology

3 credits. A study of instructional media and basic media design stressing planning, producing and applying instructional media. This course includes evaluation and use of commercial software, data bases, desktop publishing, simulations and problem solving for elementary certification candidates. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 250.*

305 Methods of Secondary Education

4 credits. A study of the instructional methodology of an academic discipline under the guidance of a clinical professor in the academic major. Field experience required. *Prerequisite: Education 230.*

315 Early Childhood Education

3 credits. A study of programs for young children with regard to theoretical base, curricular goals, teacher role, physical environment, and program sponsorship. Requires field experience. *Prerequisites: Education 250 and 265.*

320 Special Methods in Early Childhood Education

3 credits. A study of developmentally appropriate procedures and materials for the preschool child, emphasizing the importance of play in Early Childhood programs. Requires field experience. *Prerequisites:* Education 250 and 265.

325 Science and Health in the Elementary School

3 credits. A study of science processes in an elementary school program; the utilization of multiple resources, organization, management, evaluation, instructional strategies, and integration of science and health in the elementary school program. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 335, 345, 355, 365, and 385.

335 Mathematics in the Elementary School

3 credits. A study of how children develop a background of understanding and skill in mathematics, concentrating on the development of problem solving, reasoning, and communication skills in mathematics, and connecting mathematics and the real world. Additional focus will be on organization for instruction, alternative means of evaluation, teaching special needs and at-risk students. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 345, 355, 365, and 385.

345 Reading and the Integrated Curriculum

3 credits. A study of reading instruction and its integration across the elementary school curriculum. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, 365, and 385.

355 Writing and the Integrated Curriculum

3 credits. A study of writing instruction and its integration across the elementary school curriculum. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, 365, and 385.

365 Social Studies for Elementary Education

4 credits. A study of content, teaching strategies, materials, organizing approaches, and curriculum for teaching social studies in the elementary school. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, and 385.

371-379 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite:* permission of instructor.

385 Elementary Education Practicum

1 credit. Supervised field placement. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, and 365.

415 Reading in the Content Area

2 credits. A study of the theory and practice of secondary education with an emphasis on developmental reading and reading in the content area. *Prerequisite:* Education 305. *Corequisite:* Education 473.

471 Professional Internship

16 credits. Student teaching for seven weeks in a pre-K setting and for seven weeks on a K-3 setting. *Prerequisites:* Education 315, 320, 325, 335, 345, 355, 365, and 385.

472 Professional Internship

16 credits. Student teaching at the K-6 level. *Prerequisites:* Education 325, 335, 345, 355, 365, and 385.

473 Professional Internship

14 credits. Student teaching at the 7-12 level. *Prerequisite:* Education 305. *Corequisite:* Education 415.

474 Professional Internship

17 credits. Student teaching for a minimum of ten weeks in a K-6 setting and for six weeks in a pre-K setting. *Prerequisites:* Education 315, 320, 325, 335, 345, 355, 365, and 385.

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

Engineering

See Department of Physics, page 54.

Department of English

Professors Campbell (*Chair*), Dwyer, Sarracino
Associate Professor Rohrkemper
Assistant Professors Frawley, Hergert, Martin, Mead
(*Director of Professional Writing Program*)
Lecturer: O'Donnell (*Supervisor, English Secondary Education Program*)

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary studies is the fundamental aim of the Core Program and of the rigorous and comprehensive tracks which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The literature track requires English 209, 301, and 394; four 200 level English courses, three with middle digit 2 (one of which must be prior to 1800), and one with middle digit 4; three 300 level English courses, one with middle digit 1, and two with middle digit 9 (one of which must be prior to 1800); one English course with the middle digit 8; three English electives above the 100 level; and Modern Language 112 or higher.

The professional writing track requires English 185, 209, 302, and 393; four 200 level English courses, two with middle digit 2 (one of which must be prior to 1800), one with middle digit 4, and one with middle digit 8; two 300 level English courses, one with middle digit 1, and one with middle digit 9; one English elective above the 100 level; two courses from English 382, 384, or 385; one professional writing elective from English 281, 282, 283, 284, 381, 382, 385, 386, or 473; Computer Science 120; and Modern Language 112 or higher.

The secondary education track requires English 185, 209, 241, 242, 301, 302, 306, and 332; two 200 level English courses with middle digit 2 (one of which must be prior to 1800); one course from English 381, 384, or 385; one 300

level English course with middle digit 1; one English elective; Modern Language 112 or higher; and Education 205, 230, 305, 415, and 473.

English majors in all tracks must successfully complete a Modern Language course at the 112 level, or higher, if so placed.

An English major may not use any English 100 level course except English 100 or English 150 to satisfy core or major requirements.

The Department of English offers *minors* in literature and professional writing. Each minor requires 24 hours distributed as follows: **Literature** – English 209; three 200 level English courses, two with middle digit 2 (one of which must be prior to 1800), and one with middle digit 4; three 300 level English courses, one with middle digit 1, and two with middle digit 9 (one of which must be prior to 1800); and one English elective. **Professional Writing** – English 185, and 209; three 200 level English courses, one with middle digit 2, one with middle digit 4, and one with middle digit 8; two 300 level English courses, one with middle digit 8, and one with middle digit 9; and one English elective with middle digit 8.

011 Fundamentals of Composition

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. *Credits are not applicable to the 125 required for graduation.* Staff.

100* Writing and Language

3 credits. (**Power of Language**) A writing course focusing on writing as a process of discovery of ideas, drafting, revision, and editing. Students read, write, and speak about a variety of aspects of the power of language. Assignments may include but are not limited to linguistic analysis, history of the language, and the analysis of language in and out of contexts. Topics include writing and literature, writing and persuasion, and writing and society. Staff. *Note: A student may be placed in English 100 or 150. Those assigned to English 100 must complete this course to satisfy the Power of Learning core and may not enroll in English 150. A student placed in English 150 may not enroll in English 100.*

105* Introduction to Literature

3 credits. (**Cultural Heritage and Old Core**) A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature. Readings are drawn from major authors such as Homer and Shakespeare. Staff.

110* Literature: Expressive Form

3 credits. (**Creative Expression**) A study of how different forms of literature produce different aesthetic experiences and responses. The course will focus on a specific theme such as war, the self, the family, or contemporary culture to make comparisons between genres more obvious. Poetry, drama, short stories, essays, films, and novels are possible genres for consideration. Staff.

112* Introduction to Poetry

3 credits. (**Cultural Heritage**) A study of the English and American lyric from Old and Middle English through the Renaissance, 18th, 19th centuries, to the present day. Staff. *Note: This course was previously listed as English 115, The Lyric Tradition. Students who completed and have credit for English 115, may not enroll in English 112.*

113* Introduction to Drama

3 credits. (**Values and Choice**) The analysis of character and motive in

8-10 plays. A psychological approach will emphasize how actions and words reveal personality. Staff.

116* Film as Literature

3 credits. (**Creative Expression**) An introduction to film as an art form with particular attention to the discourse of film: how film "speaks" to us; how we speak about film. Staff.

121* Money and Status in American Literature

3 credits. (**Values and Choice**) This course begins by examining Max Weber's analysis of the "Protestant Work Ethic," and other political, philosophical and historical underpinnings of wealth in America, including the earliest visions of America as a new Eden, an abundant paradise. Students will read ten important works, and each student will keep a journal to be used in discussion groups and also as a source for essays. Of five or six essays written, several will be selected by the student to be rewritten and handed in for grading. There will also be periodic short quizzes and a final examination. Prof. Sarracino.

135* Shakespeare Through Performance

3 credits. (**Creative Expression**) Students gain a deep critical and imaginative understanding of Shakespeare's plays and a knowledge of the Elizabethan theatre and its stage conventions by reinforcing textual analysis with informal performance of scenes from several key works. Staff.

150* Advanced Writing and Language

3 credits. (**Power of Language**) A writing course designed to explore the writing process while studying the history of the English language, its past and present uses and powers. Students will be writing, reading, and speaking about a variety of aspects of the history and power of language. Assignments may include but are not limited to linguistic analysis, history of the language, de-constructive techniques, and the analysis of language in and out of contexts. Staff. *Note: A student may be placed in English 100 or 150. Those assigned to English 100 must complete this course to satisfy the Power of Learning core and may not enroll in English 150. A student placed in English 150 may not enroll in English 100.*

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisite: permission of the instructor.* Profs. Hergert, Mead, Rohrkemper.

209 Introduction to English Studies

3 credits. The study of English as an academic discipline with emphasis on close reading and theories of textual analysis, library research on literary, pedagogical, and rhetorical topics, and terminology of language and literary analysis, among other primary considerations. **Required of English majors and recommended for those considering the English major.** Staff.

221* The Literature of Medieval England

3 credits. (**Cultural Heritage**) A study of the literature and culture of Medieval England, with an emphasis on sexual roles, philosophy and cosmology, historical events, and the literary genres of this formative period in English history. Prof. Martin.

222* Literature of the Renaissance

3 credits. (**Cultural Heritage**) A study of the literature and culture of the Renaissance, with an emphasis on sexual roles, philosophy and cosmology, political values, and the literary forms of this yeasty time of rebirth and new knowledge. Prof. Martin. *Note: Students who have credit for English 320 or 322 may not enroll in this course.*

223* English Neo-Classicism

3 credits. (**Cultural Heritage**) A study of the prose and poetry from the period of 1600 to 1800 with an emphasis on Dryden, Pope, Swift, Sterne, and Johnson. Prof. Dwyer. *Note: Students who have credit for English 323 may not enroll in this course.*

224* English Romanticism

3 credits. **(Cultural Heritage)** A study of the verse and prose of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats, developing various concepts of Romanticism. Prof. Dwyer. *Note: Students who have credit for English 327 may not enroll in this course.*

225* Victorian British Literature

3 credits. **(Cultural Heritage)** A study of selected prose and poetry of the Victorian Age, emphasizing the relationship of the literary text to social and cultural conditions. Authors will include Tennyson, Dickens, Carlyle, the Brownings, and Hardy. Staff. *Note: Students who have credit for English 328 may not enroll in this course.*

226* Twentieth Century British Literature

3 credits. **(Cultural Heritage)** An examination of British literary, cultural, and social thought in the twentieth century as evidenced in a number of literary works by authors from England and other nations of the British Commonwealth. Prof. Dwyer. *Note: Students who have credit for English 329 may not enroll in this course.*

241* American Literature I

3 credits. **(Cultural Heritage)** This course will assume general familiarity with American history and literature and build upon that basic knowledge to explore themes in American literature from the time of the Puritan settlers through the later nineteenth century, focusing on the Civil War. Prof. Sarracino. *Note: Students who have credit for English 340 may not enroll in this course.*

242* American Literature II

3 credits. **(Cultural Heritage)** An examination of American literary, cultural, and social thought from the late nineteenth century to the present, as evidenced in a number of representative texts. Prof. Rohrkemper. *Note: Students who have credit for English 341 or 342 may not enroll in this course.*

245* Growing Up in America

3 credits. **(Values and Choice)** The main purpose of this course is to allow students, through a careful reading of important American novels and biographies, better to understand the distinct experiences that comprise growing up in America. In this course we will explore deeply both the uniqueness of experiences of growing up in America, and also the universality of shared problems, crises, challenges, and joys. Staff.

251* The Literature of Laughter

3 credits. **(Creative Expression)** A study of works from a variety of literary genres which create and comment on humor. Students will read a fable, short stories, novels, light verse, a play, and humorous essays, as well as essays which deal with the theories of humor. Comic forms represented include humorous social commentary, satire, and black comedy. Works to be read include "The Praise of Folly," "A Modest Proposal," "The Mysterious Stranger," and *Catch-22*. *Prerequisite: Completion of Power of Language requirement.* Prof. Hergert.

281* Writing and Analyzing the Short Story

3 credits. **(Creative Expression)** Students will analyze classic short stories using the language and concepts of literary criticism through discussion, oral presentations, and a major research paper. Emulating classic literary models, they will write original short stories, revising according to detailed critiques by their peers and the instructor. *Prerequisite: Completion of Power of Language requirement.* Staff.

282 Writing in the Health Professions

3 credits. Students will read and analyze the discourse common to the medical professions in addition to literature about the profession. Students will practice the forms of medical writing, culminating in a research project. *Prerequisite: Permission of instructor. Professional Writing majors must also have completed English 185.* Spring semester, alternate years. Prof. Mead.

283 Writing for Government and the Judicial System

3 credits. A survey of the types of writing common in government, politics, and law. Students will practice basic legal analysis, statistical

analysis, persuasion, and more advanced forms of legal writing such as the appellate brief. **Highly recommended to pre-law and political science majors.** *Prerequisite: Permission of instructor. Professional Writing majors must also have completed English 185.* Prof. Mead.

284 Writing in the Social Sciences

3 credits. Students will analyze articles, books, reviews, and research in the fields of psychology, political science, anthropology, sociology, history, and economics. In addition, students will practice writing a variety of research forms, including the observation, experiment, survey/interview, etc. *Prerequisite: Professional Writing majors must have completed English 185.* Alternate years. Prof. Mead.

301 History of the English Language

3 credits. A study of the evolution of the English language from its Indo-European and, specifically Germanic origins into its modern form by observation of changes in vocabulary, grammar, and pronunciation. These changes are examined, primarily, in selected readings from Olde, Middle, and Renaissance English literature. Fall semester, alternate years. Prof. Martin.

302 Grammar and Linguistics

3 credits. A summary of traditional, transformational, and transactional grammars; and structural, social, and psycholinguistics, including biological and environmental influences on language acquisition. Spring semester, alternate years. Prof. Mead.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and/or the Learning Center. *Prerequisite to professional semester.* Prof. O'Donnell.

311 Genre Studies

3 credits. A study of a particular genre such as autobiography or the non-fiction novel. Representative works will be discussed. Since the course may vary in focus, it may be repeated for credit, providing the content is not duplicated. Staff.

313 Studies in Drama

3 credits. A study of drama considering such issues as links between the visual and verbal representation of meaning, and the development of the concepts of comedy and tragedy. Since the course may vary in focus from early drama to modern, it may be repeated for credit, providing the content is not duplicated. Profs. Campbell, Martin.

317 Studies in the Novel

3 credits. A study of the novel, including the development of the genre and its literary history in particular periods. Representative works will be discussed. Since the course may vary in focus from early forms to modern, it may be repeated for credit, providing the content is not duplicated. Fall semester. Staff.

318 Studies in Poetry

3 credits. A study of at least three major poets from one or more periods of American or English literature. Staff.

332 Shakespeare

3 credits. **(Old Core)** A study of representative works of Shakespeare. Spring semester, Profs. Campbell, Martin.

352 The Fantastic in Literature

3 credits. **(Old Core)** A study of major works of fantasy (Alice in Wonderland, The Hobbit, The Golden Key, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic" Fall semester, alternate years. Prof. Sarracino.

357 Women and Literature

3 credits. **(Old Core)** A study of the effects on women writers and readers of a male dominated literary tradition. Alternate years. Staff.

371-379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/ faculty interest. Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite:* permission of instructor. Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentation of technical and scientific information. *Prerequisite:* Professional Writing majors must also have completed English 185 and one 200 level Professional Writing course. Profs. Hergert, Mead.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course in advanced writing and professional editing. *Prerequisite:* English 185 and permission of instructor, Professional Writing majors must also have completed a 200 level Professional Writing course. Profs. Hergert, Mead.

385 Writing for Publication

3 credits. Advanced study of copy editing and of techniques for promoting one's own manuscripts. *Prerequisite:* Permission of instructor. Professional Writing majors must have completed English 185 and a 200 level Professional Writing course. Prof. Hergert.

391 Chaucer

3 credits. A study of *The Canterbury Tales* and shorter works, with a focus on the art of the tales and on cultural issues such as the place of women in medieval society. Prof. Martin. *Note:* Students who already have credit for English 331 may not enroll in this course.

393 Seminar in History and Theory of Rhetoric and Composition

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisites:* Professional Writing concentration, English 185, and one 200 level Professional Writing course. Spring semesters, alternate years. Prof. Mead.

394 Senior Seminar in Literary Theory

3 credits. A seminar for literature majors on the history of literary theory and criticism. *Prerequisites:* English Literature concentration, or permission of the instructor. Fall semester, alternate years. Prof. Dwyer.

395 The Renaissance Epic: Spenser and Milton

3 credits. A study of representative works by Spenser and Milton, with emphasis on issues of Renaissance culture such as religion, politics, and gender. Prof. Martin. *Note:* Students who have credit for English 333 may not enroll in this course.

397 Major Authors

3 credits. A study of the writings of one or two American or British author(s) such as Blake/Pope, Faulkner/O'Neill, Austen/Eliot, Hall/Bly/Kinnell. Since the authors studied may vary from term to term, the course may be repeated for credit, provided the content is not duplicated. Staff.

470-479 Internships

1-3 credits. On-campus internships may be requested in the student's sophomore, junior, or senior year. Off-campus internships are for students proven competent in on-campus internships or judged as having special aptitudes for the specific internship. *Applications for internships in the Department of English are due March 15 for summer and fall semesters, and November 15 for spring semester.* Prof. Mead.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite:* Education 230. Prof. O'Donnell.

Department of Fine and Performing Arts

Professors Harrison (*Chair*), Kitchen
Associate Professors Douglas, Stites
Assistant Professors Friedly, Palmquist,
Rohrbacher, Sevareid
Instructors Hunter, Schellenberg
Lecturer Ronning

Bachelor of Arts; Bachelor of Science

The department offers three majors which lead to the degree of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, or Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theatre. Minors are offered in Visual Art, Music, and Fine and Performing Arts. The music programs are fully accredited by the National Association of Schools of Music.

Fine and Performing Arts

The *minor in The Fine and Performing Arts* is intended for those students with a broad *interest* in the Arts; it does not necessarily demand a *skill* in any particular arts area. The minor includes one introductory course with an academic emphasis and one with an experiential emphasis in each discipline. Required courses are Art 105 or 106, and 155; Music 105 and 101-103 or 115 or 305; Theater 105 and 155 or 165; Dance 101; and FAPA 455. The FAPA minor totals 22 credits.

455 The Arts in America Today

3 credits. An investigation of contemporary principles and common goals among the arts in American society with an emphasis on the development of critical and evaluative skills. *Prerequisite:* FAPA minors must previously complete all other coursework for the minor; other students require permission of the instructor. Spring Semester. Prof. Douglas.

Visual Arts

The academic and the practical courses in the visual arts program aim to refine students' creative potential, expand their judgment of the visual arts, and discern the contrasts and relationships among the arts of our Western culture and those of non-Western traditions.

Minor in Visual Arts. The minor in Visual Arts requires Art 105, 106 or 220, 155, 203 or 324, and six hours of

electives in visual arts courses. Communications 315 may be one of the elective courses.

105* Drawing I

3 credits. **(Creative Expression and Old Core)** Studio practice in basic drawing media for sketching and rendering both live and inanimate subjects. Profs. Friedly, Schellenberg.

106 Ceramics I

3 credits. **(Old Core)** Introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

155* Introduction to Art

3 credits. **(Cultural Heritage and Old Core)** An overview course to introduce students to the range and theories of European/American painting and to acquaint them with ramifications social, political, aesthetic, and economic revealed by the arts; with further emphasis on modes of art deriving from other than our historic Western impulses. Prof. Schellenberg.

203* Twentieth Century American Art

3 credits. **(Cultural Heritage and Old Core)** An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. Studio easel painting in opaque media, with stress on pictorial organization and application of color theories. *Prerequisite: Art 105 or permission of the instructor.* Prof. Schellenberg.

206 Ceramics II

3 credits. An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite: Art 106.* Prof. Friedly.

220 Sculpture

3 credits. **(Old Core)** An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and instruction in the use of the sculptor's materials and techniques. Prof. Friedly.

324 American Arts/Crafts

3 credits. **(Old Core)** A comprehensive scan of the fine and decorative arts of the United States from Colonial beginnings to the present, citing their derivation from social, ethnic, and aesthetic influences. Staff.

351 Printmaking

3 credits. Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite: Art 105 or permission of the instructor.* Prof. Friedly.

Dance

DA 101* Interpretive Movement

1 credit. **(Physical Well Being and Old Core)** Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Graded P/NP. Prof. Williams-Henry.

DA 102* Introduction to Ballet

1 credit. **(Physical Well Being and Old Core)** Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Graded P/NP. Prof. Williams-Henry.

Music

The music courses are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained at the department office.

The department has adopted requirements for junior standing for music majors. A copy of these requirements is available in the department office.

The music education major requires Music 100, 101, 102, 103, 104, 201, 202, 203, 204, 205, 231, 234, 237, 238, 301, 311, 312, 321, 322, 343, 344, 440, 441, 442, 443, 471, a minimum of twelve hours of applied music instruction, a minimum of seven credit hours in ensemble participation, a senior recital, and Education 205.

The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 100, 101, 102, 103, 104, 141, 150, 151, 201, 202, 203, 204, 205, 231, 234, 237, 252, 301, 321, 343, 353, 354, 440, 441, 442, 443, 455, 456, 473, 474, 475, 479, a minimum of twelve semester hours in applied music instruction, a senior recital, and a minimum of six credit hours in ensemble. A six-month internship in an approved clinical facility is required for the music therapy degree and is taken after the completion of the four-year music therapy program.

The music therapy program is approved by the National Association for Music Therapy and the National Association of Schools of Music.

In order to graduate, a music therapy or music education major must maintain the following standards:

(1) *A music therapy major* must earn a grade of C- or better in all music and music therapy courses. *A music education major* must earn a grade of C- or better in all music and music education courses, and in Education 205.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicums and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

The Bachelor of Arts in Music normally requires Music 100, 101, 102, 103, 104, 201, 202, 203, 204, 205, 321, 322, 419, 440, 441, 442, 443, twelve semester hours credit in

applied music, a senior recital, and three hours of ensemble credit. The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental advisor, a Bachelor of Arts music major works out a program which includes at least 40 hours of music courses.

The Minor in Music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The Minor in Music requires Music 101-103; 102-104 or 305; 105; 415 or 417 or 441 or 442 or 443; four semesters of instruction in one applied music area; minimum of two credits of music ensemble participation; a minimum of three credits of music electives; and attendance at Repertoire Class (Music 100) for four semesters.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to pre-college students, adults, and college students who desire to take instruction without credit. Instruction is available from departmental faculty and other qualified teachers. Interested persons should contact Prof. Debra Ronning, director of the Preparatory Division.

100 Repertoire Class

0 credit. This class provides performance opportunities for students in applied music. It meets for 1 hour each week and is required for all music majors and minors who are enrolled for applied music instruction.

101 Music Theory

2 credits. **(Old Core)** Fundamentals of music theory, harmony, and form, with emphasis on scales, keys, modes, notation and non-harmonic tones. Fall semester. Prof. Grubb.

102 Music Theory

2 credits. **(Old Core)** A continuation of Music 101, with an introduction to modulation and seventh chords. Includes binary and ternary forms. *Prerequisites:* Music 101, 103; *permission of instructor.* Spring semester. Prof. Grubb.

103 Fundamentals of Sight Singing and Training

1 credit. Development of visual and aural skills related to the theoretical and analytical materials covered in Music 101. *Corequisite:* Music 101. Fall semester. Prof. Grubb.

104 Sight Singing and Ear Training

1 credit. A continuation of 103. *Prerequisite:* Music 103 or *permission of instructor.* Spring semester. Prof. Grubb.

105* Introduction to Music Literature

3 credits. **(Cultural Heritage and Old Core)** Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Douglas, Harrison, Stites.

106* Interpretation of Music

1 credit. **(Creative Expression)** This is a course for general college students who can read music and who wish to participate in a musical ensemble or continue private lessons. It is designed to supplement the musical experience by developing a deeper understanding of musical interpretation, as distinct from technique. In the lectures which discuss particular aspects of interpretation, examples from those works being prepared for performance in the ensembles and lessons will be used. This course fulfills the AU core requirement in "Creative Expression" when coupled with enrollment in an ensemble or private instruction for both semesters the same academic year in which it is taken. One 50-minute class meeting per week. Spring semester. Prof. Kitchen.

111 Voice Class

1 credit. **(Old Core)** Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Profs. Mekeel, Stites.

115* Music Fundamentals at the Keyboard

3 credits. **(Creative Expression and Old Core)** This course provides the student with basic skills in producing and reading music at the keyboard. Attention is given to ear training, basic keyboard technique, and musicianship, as well as to sight reading. The course utilizes the department's digital piano laboratory. Daily practice is required. Fall and Spring. Prof. Douglas.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite:* music major. Prof. Ronning. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. Fall semester. Prof. Cullen. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

120 Guitar Class

1 credit. **(Old Core)** A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite:* Music 119 or *permission of instructor.* Spring semester. Prof. Cullen. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

141 Recreational Music

2 credits. Survey of recreational music resources and activities, with emphasis on the development and application of leadership and music performance skills in recreational and therapeutic settings. *Prerequisite:* music major or *permission of instructor.* Spring semester. Prof. Rohrbacher.

150 Professional Seminar

0 credit. A weekly seminar for music majors enrolled in professional degree programs. Guest speakers, faculty, and students present topics of mutual interest, including career development, application of music skills, and professional service. Required of music therapy and music education majors each semester. Staff.

151 Introduction to Music Therapy

2 credits. A survey of music therapy through lecture-demonstration sessions, readings, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite:* music major or *permission of instructor.* Fall semester. Prof. Rohrbacher.

201 Advanced Music Theory

2 credits. Advanced harmony including seventh chords, chromatic harmony, and form and analysis. 18th-century Counterpoint is introduced. *Prerequisite:* Music 102, 104. Fall semester. Prof. Douglas.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on 19th and 20th century harmonic practice. Includes compositions using 18th century contrapuntal techniques. *Prerequisite: Music 201, 203.* Spring semester. Prof. Douglas.

203 Advanced Sight Singing and Ear Training

1 credit. Continued emphasis on reading and dictation skills. *Corequisite: Music 201.* Fall semester. Prof. Rohrbacher.

204 Advanced Sight Singing and Ear Training

1 credit. A continuation of Music 203. *Prerequisite: Music 203 or permission of instructor; Corequisite: Music 202.* Spring semester. Prof. Rohrbacher.

205* Music of Non-Western Cultures

3 credits. **(Foreign Cultures and International Studies)** Contemporary music indigenous to eight non-Western geographic regions of the world are studied and compared in terms of tonal and rhythmic attributes, and as an approach to promoting socio-cultural awareness. *Prerequisite: Music major; permission of instructor for non-majors.* Spring semester. Prof. Rohrbacher.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. Spring semester. Profs. Moore, Webster.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. Fall semester. Prof. Luckenbill. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

235 History of Jazz

3 credits. **(Old Core)** Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, and viola in individual and class settings. Fall semester. Prof. Leithman. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

238 Intermediate String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching cello and double bass in individual and class settings. *Prerequisite: Music 237.* Spring semester. Prof. Zurluh.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: Music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202-204, 269.* Fall semester. Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Provides students opportunities to develop skills in singing, song leading, listening, creating, and performing. Emphasizes applying knowledge and skills to provide musical experiences for young children and work with music specialists. Includes observation of music instruction and performance. Prof. Palmquist.

311 Music in the Elementary School

3 credits. Study of techniques, methods and materials used in teaching elementary music classes. Emphasizes performance, observation, assessment, and organization through observation, teaching, and participation in class music activities. *Prerequisite: Music major or permission of instructor.* Fall semester. Prof. Palmquist.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experiences included. *Prerequisite: Music major or permission of the instructor.* Spring semester. Prof. Kitchen.

321 Instrumental and Choral Conducting Fundamentals

3 credits. Instruction in the fundamentals of conducting. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisites: Music 202 and 204 or permission of instructor.* Fall semester. Prof. Kitchen.

322 Instrumental and Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Prof. Stites.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and a study of string ensemble techniques, methods, and literature. *Prerequisite: Music 238.* Fall semester. Prof. Palmquist. *(The department reserves the right to offer this course as private lessons if fewer than three students are enrolled.)*

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. Fall semester. Prof. Hall-Gulati. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343.* Spring semester. Prof. Hall-Gulati. *The department reserves the right to offer this course as private lessons if fewer than 3 students are enrolled.*

353 Music Therapy Techniques

2 credits. The study of behavioral and music therapy techniques used in clinical practice, with emphasis on observation, assessment, program implementation, and accountability. *Prerequisite: Music 252.* Fall semester. Prof. Rohrbacher.

353L Music Therapy Techniques Laboratory

1 credit.

354 Music Research Methods

2 credits. Introduction to music research. Emphasis on reading, evaluating and applying research findings and on using research techniques in music therapy and music education. Includes the collection, codification, interpretation, and presentation of data. *Prerequisite: Psychology 105.* Spring semester. Prof. Palmquist.

371-379 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

415 Classical Romantic Music Literature

2 credits. **(Old Core)** Survey of instrumental and vocal music of the Classical and Romantic periods. *Prerequisite: Music 105 or permission of instructor.* Not offered 1992-93. Prof. Stites. *NOTE: Students who have received credit for either Music 441 or 442 may not enroll in Music 415.*

417 Twentieth Century Music Literature

2 credits. (Old Core) Survey of music from Impressionism to the present avant garde styles. *Prerequisite:* Music 105 or permission of instructor. (Not offered 1992-93). Prof. Harrison. *NOTE: Students who have received credit for Music 443 may not enroll in Music 417.*

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisites or corequisites:* Music 202 and 204. Spring semester. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. Credit for Music 431 is given only upon completion of Music 432. *Prerequisites:* two semesters of Music 269. Fall semester. Prof. Ronning.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite:* Music 431. Spring semester. Prof. Ronning.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. Spring semester. *Prerequisites:* Music 202, 204. Prof. Douglas.

441 Music History and Literature I

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from antiquity until about the year 1700. Examples of great music will be ever present. *Prerequisites:* Music 202 and 204 or permission of instructor. Spring semester. Prof. Harrison. *NOTE: Students who have received credit for Music 415 may not enroll in either Music 441 or 442.*

442 Music History and Literature II

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from around the year 1700 through the 19th century. Examples of great music will be ever present. *Prerequisites:* Music 202 and 204 or permission of instructor. Not offered 1992-93. Prof. Harrison. *NOTE: Students who have received credit for Music 415 may not enroll in either Music 441 or 442.*

443 Music History and Literature III

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians of the 20th century. Examples of great music will be ever present. *Prerequisites:* Music 202 and 204 or permission of instructor. Fall semester. Prof. Harrison. *NOTE: Students who have received credit for Music 417 may not enroll in either Music 443.*

455 Music Therapy I: Principles

2 credits. A survey of literature on the nature and principles of music therapy, including theory, practice and research. The application of these principles according to specific client populations and preparation for clinical internship will be emphasized. *Prerequisites:* Music 252, 353, 354; or permission of instructor. Fall semester. Prof. Rohrbacher.

455L Music Therapy I Laboratory

1 credit.

456 Music Therapy II: Practices

2 credits. The study of philosophies and practices of disciplines as related to music therapy and the role of the music therapist as a treatment team member. Emphasis will be on the integration of the knowledge and skills associated with the practice of music therapy and issues related to professional employment. *Prerequisite:* Music 455 or permission of instructor. Spring semester. Prof. Rohrbacher.

456L Music Therapy II Laboratory

1 credit.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite:* permission of department. Prof. Palmquist.

473-75 Practical Experiences I-III: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. A minimum of thirty hours for each clinical experience is required. Music therapy majors only. *Prerequisites:* Music 141, 151. Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite:* permission of instructor. Prof. Rohrbacher.

481-489 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, performance or research under faculty supervision. *Prerequisite:* permission of instructor. Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department office for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles.

Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; ensemble registration for credit may be repeated. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director. Ensembles are graded P/NP.

Music 106 must be taken with ensembles or private lessons to fulfill the Creative Expression requirement in the Core curriculum. See the description of Music 106.

268* Voice

1 credit. (Old Core) Profs. Mekeel, Stites.

269* Piano

1 credit. (Old Core) Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Ronning, Schroeder.

270* Organ

1 credit. (Old Core) Prof. Schroeder.

271* Violin

1 credit. (Old Core) Prof. Palmquist.

272* Viola

1 credit. (Old Core) Prof. Palmquist.

273* Cello

1 credit. (Old Core) Prof. Zurfluh.

274* String Bass

1 credit. (Old Core) Prof. Zurfluh.

275* Guitar

1 credit. (Old Core) Prof. Cullen.

276* Flute

1 credit. (Old Core) Prof. Kirkpatrick.

277* Clarinet

1 credit. (Old Core) Profs. Hall-Gulati, Kitchen.

278* Oboe

1 credit. (Old Core) Staff.

279* Bassoon

1 credit. (Old Core) Staff.

280* Saxophone

1 credit. (Old Core) Profs. Hall-Gulati, Kitchen.

281* Trumpet/Cornet

1 credit. (Old Core) Prof. Webster.

282* French Horn

1 credit. (Old Core) Prof. Webster.

283* Trombone

1 credit. (Old Core) Prof. Moore.

284* Baritone/Euphonium

1 credit. (Old Core) Prof. Moore.

285* Tuba

1 credit. (Old Core) Prof. Moore.

286* Percussion

1 credit. (Old Core) Prof. Luckenbill.

360 Chamber Music

1/2 credit. (Old Core) General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Piano Trio, and Piano Ensemble will be formed as need arises.

361* Concert Choir

1 credit. (Old Core) Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Stites.

362 Choral Union

1/2 credit. (Old Core) Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. Mekeel.

365* Orchestra

1 credit. (Old Core) Open to all qualified students; acceptance subject to approval by director. Presentation of several concerts during the year. String, chamber, and full orchestra music is performed. *Prerequisite for winds and percussion: permission of instructor.* Prof. Palmquist.

368 Jazz Lab

1/2 credit. (Old Core) The Jazz Lab offers small groups of students instruction in the basic skills of improvisation, stylization, and perfor-

mance. The lab complements the jazz component of the Concert Band. Prof. Kitchen.

369* Concert Band

1 credit. (Old Core) Open to all qualified students; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

105* Introduction to Theatre

3 credits. (Cultural Heritage and Old Core) Introduction to the various interrelated arts and disciplines that make up theatre performance and production, such as acting, playwriting, directing, and scene design. Emphasis is on history, literature, and theory, with support from a textbook, audio-visual aids, analysis of scripts, and possibly one or more field trips. Prof. Hunter.

155* Stagecraft and Lighting

3 credits. (Creative Expression and Old Core) Examination and application of theatre staging, design, and lighting. Topics include scenery design and construction, execution of technical effects, and theatre safety. Prof. Hunter.

165* Basic Acting

3 credits. (Creative Expression and Old Core) Theory and practice of the art and craft of the stage actor. Skills are developed in voice, body involvement, script analysis, style and theory. Students participate in projects requiring the memorization, creation, and presentation of scenes. Prof. Hunter.

365 Advanced Acting

3 credits. An advanced course in acting techniques and styles. Students will study, interpret, and perform scenes from classic dramas in theater history from the Greeks to the Absurdist. Prof. Severeid.

French

See Department of Modern Languages, page 48.

German

See Department of Modern Languages, page 48.

Department of History

Professors K. Kreider, Mumford (*Chair*), Ritsch, Vassady, Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of

man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 115 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts degree as a history major and receive certification in social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

For a *minor in history*, the student must successfully complete 18 hours of course work, composed of the following courses: History 115, 201, 202, and three additional history courses. Students with specific career or personal interests are encouraged to discuss these with the department chair.

115* Modern European History

3 credits. **(Cultural Heritage and Old Core)** An examination of the major developments that have taken place in European history since 1500. This course will not survey all of the developments over 500 years, but choose those that seem significant in their impact on subsequent developments. Staff.

201* History of the United States to 1877

3 credits. **(Social World and Old Core)** An examination of the major developments in U.S. history from the beginning to 1877. This course will involve a discussion of interpretations of the American past and of controversial issues in American history. Fall semester. Profs. Mumford, Winpenny.

202* History of the United States since 1877

3 credits. **(Social World and Old Core)** An examination of the major developments in U.S. history since 1877. This course will involve an examination of both content and interpretations of the American past. Spring semester. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. **(Old Core)** A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

208* Technology and Values in the American Experience

3 credits. **(Values and Choice and Old Core)** An effort to understand the values implicit in the choices that have been made in substituting a newer technology for an older technology throughout American history. Transportation, systems of production, the generation of power, medicine, and armaments constitute areas of particular emphasis. Prof. Winpenny.

215* English History to 1688

3 credits. **(Cultural Heritage and Old Core)** An introduction to the political, social, and cultural history of England from the Anglo-Saxons to the Glorious Revolution, with particular attention to the growth of those attitudes and those institutions, such as the monarchy, parliament, the common law, and the church, which were brought to the American colonies. Fall semester. Prof. Poole.

216* English History since 1688

3 credits. **(Cultural Heritage and Old Core)** An introduction to the political, social, and cultural history of modern Britain from the Glorious Revolution to the present, with particular attention to the growth of the monarchy, parliament, and the British Empire. Spring semester. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. **(Old Core)** Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Fall semester, alternate years. Prof. Kreider.

218* Europe in the Twentieth Century

3 credits. **(Cultural Heritage and Old Core)** An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Spring semester, alternate years. Prof. Kreider.

220* History of Soviet Union

3 credits. **(Foreign Cultures and International Studies and Old Core)** A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Spring semester. Prof. Kreider.

221* History of Non-Violence

3 credits. **(Values and Choice and Old Core)** An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. Kreider.

227* History of Africa

3 credits. **(Foreign Cultures and International Studies and Old Core)** A survey of African history and culture from the beginning of modern times, including Africa's response to European imperialism and colonialism and the attainment of independence in the twentieth century. Prof. Vassady.

306 Recent History of the United States

3 credits. **(Old Core)** An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. **(Old Core)** The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the

role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

310 American Ethnic History

3 credits. **(Old Core)** A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. **(Old Core)** The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. **(Old Core)** Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

319 History of Tsarist Russia

3 credits. **(Old Core)** The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Fall semester. Prof. Kreider.

323 History of China

3 credits. **(Old Core)** A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

324 History of Japan

3 credits. **(Old Core)** A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

328 Modern Africa

3 credits. **(Old Core)** Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330-339 Studies in United States History

3 credits for each course. **(Old Core)** An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340-349 Minorities in United States History

3 credits for each course. **(Old Core)** An incisive view of minorities in a society venerating majoritarian rule: for example. Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff.

371-379 Special Topics

3 credits. **(Old Core)** Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. **(Old Core)** The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. **(Old Core)** A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Staff.

406 Social and Intellectual History of the United States

3 credits. **(Old Core)** An examination of the major social and intellectual

movements in the United States from colonial times to the present with an emphasis on reform and reformers. Staff.

411 Greek and Roman History

3 credits. **(Old Core)** Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. *By special arrangement.* Staff.

412 Medieval History

3 credits. **(Old Core)** Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. *By special arrangement.* Staff.

480-489 Independent Study

Variable credit. **(Old Core)** Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas.

Prerequisites: approval of the department chair and the Provost, permission of instructor. Staff.

498-499 History Seminar

3 credits. **(Old Core)** A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell, D. Koontz, Shubert (*Chair*)
Associate Professors J. Koontz, Morse
Assistant Professors Polin, Sanchis

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

Some of these courses also satisfy the Core Program requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers six concentrations.

The *pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The *general mathematics concentration* is for those who want to design their own programs in mathematics.

In addition to the major, the department offers a minor which requires Mathematics 121, 122, 151, 201, and nine credits of courses above 205.

All mathematics majors are required to take a minimum of 39 hours in mathematics courses, including Mathematics 121, 122, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112 or above, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 222).

The *pure mathematics concentration* requires Mathematics 301, 302, 421, 422, and six credits from other acceptable mathematics electives.

The *secondary education concentration* (required for secondary education certification) requires Mathematics 301, 341, 351, 421, six credits from other acceptable mathematics electives, and Education 205, 230, 305, 415, and 473.

The *actuarial science concentration* requires Mathematics 151, 331, 351, 352, 362, and 453; Accounting 105, 106; and Economics 101, 102. Also required is evidence of successful completion of the course 100 examination of the Society of Actuaries by February of the junior year, and the course 110 examination by February of the senior year. The completion of additional examinations is strongly recommended. The following courses contain material related to actuarial examinations: Math 121, 122, 222, 201, 331, 351, 352, 362, and 453

The *statistics concentration* requires Mathematics 151, 252, 331, 351, 352, and 453.

The *computer science concentration* requires Mathematics 362, either 352 or 422, and nine credits of acceptable mathematics electives; Computer Science 122, 221, 222,

and one other 300- or 400-level computer science course other than 321. (These computer science courses also fulfill the modern language or computer skills requirement.)

The *general mathematics concentration* requires either Mathematics 352 or 422 and 12 credits of acceptable mathematics electives.

011 Intermediate Algebra

2 credits. An accelerated review of the fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101, 105, 117, 151, and 205. *Credits are not applicable to the 125 required for graduation.* Fall semester. Staff.

101 Precalculus Mathematics

4 credits. (Old Core) A highly accelerated study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. If time permits, conic sections will also be studied. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency).* Fall semester. Prof. Polin.

105* Mathematics for Liberal Studies

3 credits. (Mathematical Analysis) An introduction to mathematical structures and applications designed to help students understand the historical and contemporary role of mathematics in human endeavors. Topics will be selected from a variety of areas such as logic, set theory, probability, statistics, graph theory, computer science, and matrix algebra. Topics may vary each semester. *Prerequisite: Mathematics 011 (Competency).* Staff.

117 Concepts of Calculus

4 credits. (Old Core) Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency).* Staff. *NOTE: Students who have received credit for Mathematics 121 may not enroll in this course.*

121* Calculus I

4 credits. (Mathematical Analysis and Old Core) The basic concepts and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency).* Staff. *Note: Students who have received credit for Mathematics 117 may take this course for full credit.*

122 Calculus II

4 credits. (Old Core) A continuation of Ma 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry in the plane, parametric equations, polar coordinates, sequences and series are included, and an in-depth study of integration is completed. *Prerequisite: Mathematics 121.* Staff.

151* Probability and Statistics

3 credits. (Mathematical Analysis and Old Core) The basic principles of probability, distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and methodology, and their relation to everyday life. *Prerequisite: Mathematics 011 (competency).* Staff.

201 Linear Algebra

3 credits. (Old Core) A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, eigenvectors and linear transformations. Students will be expected to do mathematical proofs. *Prerequisite: Mathematics 121.* Prof. J. Koontz.

205 Mathematics for Elementary Teachers

3 credits. **(Old Core)** Provides a foundation in knowledge of mathematics essential for teaching in the elementary schools. Topics include number systems, geometry of measurement, coordinate geometry, three dimensional geometry, the metric system, functions, and various problem solving techniques. The course will address content preparation for elementary teachers as suggested by the National Council of Teachers of Mathematics. *Prerequisite: Completion of Mathematical Analysis core requirement. This course may be used to satisfy Math 212 for students under the Old Core requirements.* Staff.

222 Calculus III

4 credits. A continuation of Math 122, completing the topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. **(Old Core)** Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. Fall semester. Prof. Morse.

252 Statistical Methods

3 credits. **(Old Core)** A continuation of material presented in Math 151. Statistical techniques are presented for solving a variety of problems arising in business, the social, physical and life sciences. Topics include simple and multiple regression, model building, analysis of count data, nonparametric statistics, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Abstract Algebra I

3 credits. A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201.* Fall semester, even numbered years. Prof. Sanchis.

302 Abstract Algebra II

3 credits. A continuation of Abstract Algebra I involving a more in-depth study of the structures introduced in Ma 301 and abstract vector spaces. Emphasis will be on the development of skills in proof construction and interpretation of abstract concepts. *Prerequisite: Mathematics 301.* Spring semester, odd-numbered years. Prof. Sanchis.

321 Differential Equations

3 credits. A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods are studied, including techniques for solving linear systems of differential equations. *Prerequisite: Mathematics 201, 222.* Spring semester. Prof. Polin.

324 Mathematical Models and Applications

3 credits. Survey of a number of mathematical topics and a variety of models in the social and life sciences. An introduction to the modeling process including problem identification, model construction, identification and collection of data, model validation, and calculation of solutions of the model. Problems provide motivation for the development of tools and techniques employed throughout applied mathematics: probability theory, matrix algebra, optimization, and linear programming. Each student will be required to present a paper. *Prerequisites: Mathematics 201, 222.* Spring semester, even-numbered years. Prof. Morse.

331 Operations Research

3 credits. A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, integer programming, dynamic programming, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: Mathematics 151, 201.* Fall semester, even-numbered years. Prof. Shubert.

341 Modern Geometry

3 credits. **(Old Core)** The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall semester, odd-numbered years. Prof. J. Koontz.

351 Mathematical Statistics I

3 credits. A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's t, Snedecor's F, and normal distributions. *Prerequisite: Mathematics 222.* Fall semester. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. A continuation of MA 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 151, 201, 351.* Spring semester. Prof. Blaisdell.

362 Numerical Analysis

3 credits. A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in the sciences, including actuarial science. Topics include solutions of equations in one variable, numerical integration, polynomial approximation, solution of linear systems, and numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; Computer Science 121.* Fall semester, odd-numbered years. Prof. Polin.

370-379 Special Topics in Mathematics

Variable Credit. A study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, series of real numbers, limits and metric spaces, and continuity. *Prerequisites: Mathematics 201, 222.* Fall semester, odd-numbered years. Prof. D. Koontz.

422 Real Analysis II

3 credits. A continuation of Math 421, including such topics as integration, differentiation, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring semester, even-numbered years. Prof. D. Koontz.

453 Time Series Analysis

3 credits. A study of the theory and application of statistical methodology pertaining to the modeling of time series. Time domain ARIMA models are emphasized, and extensive use is made of statistical analysis software. *Co-requisite: Mathematics 352.* Spring semester, odd-numbered years. Prof. Blaisdell.

480-489 Independent Study

Variable credit. Staff.

Education 305 Practicum in Secondary Education

4 credits. *Prerequisite: Education 230.* Fall semester, even-numbered years. Prof. J. Koontz.

Department of Modern Languages

Associate Professors Daiga, Goodling
Assistant Professors Barnada, Trachte (*Chair*)

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture. The pragmatic virtues of a usable skill are joined with the humanistic values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves the core program, bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by completing 30 credit hours in one language above 112. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are also encouraged to participate in the Brethren Colleges Abroad program.

Department majors must complete the following courses: Modern Languages 211, 212, 311, 323, and 495. If offered, a 312 or a 371 course may be substituted for 323. At least two of the first four courses above must be completed on the Elizabethtown College campus with members of the department faculty. In addition, the senior research project (495) must be written on campus under departmental faculty supervision. Majors must participate in the BCA program for one year and the courses taken must include advanced conversation and composition, phonetics, French/German/Spanish history, and History of (French/German/Spanish) Literature for a minimum of 15 credits in the major. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are: Modern Language 211, 212, 311, and 323. If offered, a 312 or a 371 course may be substituted for 323. At least two of the first four courses above must be completed on the Elizabethtown College campus. The remaining two may be completed on campus or in the setting of the Brethren Colleges Abroad program. After completing the required course work, stu-

dents must take the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

International students with fluency in either French, German, or Spanish may pursue a major or minor under certain circumstances. First, they must place into the 300 level at Elizabethtown College. Second, if they participate in the BCA program, they must study only at the university level and must enroll in advanced literature or linguistics courses. Third, successful completion of the major or minor will be contingent upon the rating of Superior on the oral proficiency interview.

A placement test is administered free of charge during summer orientation for freshmen. In addition, it is offered during the first week of classes in the fall and in spring semester, prior to Fall pre-registration. It may be taken at any other time during the academic year for the general college fee of \$50. All students with more than two years of language preparation must take the placement test before registering in language courses for academic credit.

111 Fundamentals of Language and Culture I (French, German, Spanish)

4 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks.

112* Fundamentals of Language and Culture II (French, German, Spanish)

4 credits. (**Foreign Cultures and International Studies and Old Core**) Expansion of basic elements of structure and the phonetic system in culturally authentic contexts. Additional development of communicative competency in five skill areas: listening, speaking, writing, reading, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks. *Prerequisite: Modern Language 111 or placement by examination.*

211* Communication Through Language and Culture I (French, German, Spanish)

3 credits. (**Foreign Cultures and International Studies**) Emphasizes functional proficiency. A functional-notational syllabus expands use of linguistic tasks such as asking questions, stating facts, describing, narrating, and expressing feelings. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 112 or placement by examination.*

212* Communication Through Language and Culture II (French, German, Spanish)

3 credits. (**Foreign Cultures and International Studies**) Expanded use of linguistic functions. Introduction and development of more advanced tasks such as sustaining opinions, explaining, comparing, and hypothesizing. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 211 or placement by examination.*

311 Making of Modern Society (French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena and issues which have shaped and continue to shape the modern nation. Readings are taken from literary, sociological and political sources.

Films, slides, and audio and videotapes supplement written materials.
Prerequisite: Modern Language 212 or permission of instructor.

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: French 211 or permission of instructor.*

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Spanish 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. **(Old Core)** Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres. *Prerequisite: Modern Language 311 or permission of instructor.*

371-379 Special Topics (French, German, Spanish, Russian)

3 credits. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability. *Prerequisite: Modern Language 212 or permission of instructor*
(*Russian courses are offered if there is sufficient interest. Course 371 provides a reading knowledge in the language.)

481-489 Independent Readings (French, German, Spanish)

3 credits. For senior language majors. Independent projects in some area of language or literature.

495 Senior Research Project

3 credits. For senior language majors. Involves researching a literary, linguistics, or cultural topic and the writing of a major paper in the target language. This capstone experience will be closely supervised by department faculty.

English As A Second Language

ESL 111 Intermediate English as a Second Language

2 credits. Focuses on the improvement of speech, listening, reading and writing skills, emphasizing the descriptive and narrative paragraph. Audio and videotapes supplement the textbook and develop communicative competency. *Prerequisite: Placement by examination and TOEFL score. NOTE: Credits do not count toward graduation requirements.*

ESL 112* Advanced English as a Second Language and American Culture

3 credits. **(Foreign Cultures and International Studies)** A continuation of ESL 111, expanding the student's functional proficiency through advanced grammar and essay development, audio/video materials to improve listening comprehension, and extended oral discourse. Reading selections increase reading comprehension and awareness and understanding of American culture. *Prerequisite: ESL 111 or placement by examination and TOEFL score.*

Department of Occupational Therapy

Associate Professors Jones (*Chair*), Petersen
Assistant Professors Farley, Kasar

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy has been accredited since 1976 by the American Occupational Therapy Association and the American Medical Association. The department was reaccredited in 1989.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 398, 402, 405, 407, 409, 410, 412, 421, 498; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; and Mathematics 151 and 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Fieldwork Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of fieldwork education. Students are responsible for their transportation and travel costs to and from assigned clerkship and fieldwork centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II fieldwork experience at the affiliated hospital or clinic.

The student may select either of the following options with faculty approval:

First Option: The student may complete three years of

academic work followed by three months of Level-II fieldwork experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II fieldwork during the summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II fieldwork experience.

Specialty Fieldwork

After completing the required six months of Level-II fieldwork, the student may elect to complete specialty Level-II fieldwork. The clinical experience may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education.

Related Expenses

Additional expenses for the occupational therapy student normally include transportation to fieldwork sites, room and board during Level II fieldwork, insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association. There are reduced rates for students.

National Certification Examination

Upon being awarded the bachelor's degree in occupational therapy and successful completion of Level-II fieldwork, the student is eligible to sit for the national certification examination, held twice a year, in July and January. The examination is conducted by the American Occupational Therapy Certification Board (AOTCB) which is responsible for awarding certification and the designation Occupational Therapist Registered (OTR).

Admission Requirements for the Department

1. Prior To Admission Into The Department:

- The student must submit an application with all supporting documentation to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. Transfers are permitted at the sophomore level only, on a space available basis.
- The student must have an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- Freshman Occupational Therapy majors are selected by the Occupational Therapy faculty. The selection process includes consideration of rank in high school class, SAT scores, TSWE scores, high school science grades, interview, and knowledge of occupational therapy.
- The names of freshmen Occupational Therapy students selected for the next academic year are submitted to the Director of Admissions.
- The Department of Occupational Therapy requires

that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a physical or emotional problem arise which the Department feels may jeopardize the student's participation in the program.

2. Evaluation After Admission Into The Department:

- Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:
 - Have at least a 2.5 average in all courses required for the major (both occupational therapy and related requirements) at the end of the sophomore year.
 - Obtain grades of at least C+ or better in OT 303, 316, 402 and 405.
 - Satisfactorily meet the standards and requirements in all phases of fieldwork education including Level-I fieldwork, laboratory, and Level-II fieldwork experience.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for nonmajors is required.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for nonmajors is required.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected activities, fine motor and product oriented as well as games and gross

motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors is required.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors is required.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy with emphasis on normal and abnormal movement. Measurement techniques for range of motion and muscle testing are presented. Concepts are integrated in lab experiences. *Prerequisites: Biology 201; Occupational Therapy majors only.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, and ceramics. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth through Adolescence

3 credits. An examination of normal human development along the birth through adolescence segment of the developmental continuum. Emphasis is on development and occupational behaviors in the areas of biophysical, cognitive, and psychosocial domains. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. The course format includes lecture, seminar, laboratory and Level I Fieldwork Experience. *Corequisite: Occupational Therapy 305. Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors is required.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic),

clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors is required.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies, and professional reporting are coordinated with Level-I Fieldwork experience, lecture, laboratory, and seminar. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors is required.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester. *NOTE: O.T. students may not count these credits toward graduation requirements.*

371-379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor required.*

398 Level II Fieldwork—Psychosocial Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of psychosocial rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum scores on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Occupational Therapy majors only.* Summer term.

402 Geriatric Occupational Therapy

2 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as geriatric occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Occupational Therapy majors only.* Spring semester.

405 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approaches used to enhance the function of individuals with major physical disabilities. Lecture, laboratory, seminar, and Level-I Fieldwork experience. *Prerequisite: Occupational Therapy 218; Corequisite: Occupational Therapy 407. Occupational Therapy majors only.* Fall semester.

407 Physical Pathology

2 credits. Medical lectures relative to the etiology, prognosis and treatment of the major conditions resulting in physical disability. *Permission of the instructor for non-majors is required.* Fall semester.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. *Prerequisites:*

Mathematics 151, 252 suggested. *Permission of the instructor for non-majors is required.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the administration and supervisory functions of managing an occupational therapy department. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, evaluation, marketing, and recruitment. *Occupational Therapy majors only.* Spring semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. Other topics including grant writing, publishing, literature critique, and data analysis. *Prerequisite: Occupational Therapy 409. Occupational Therapy majors only.* Spring semester.

414 Advanced Senior Practicum Research

Variable credit. Taken in conjunction with Occupational Therapy 412, Senior Practicum; for students who desire to participate in developing and implementing a data based research project to be conducted either on campus or at a nearby clinical facility.

420 Sensory Integration

1 credit. Introduction to study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite: Biology 201. Occupational Therapy majors only.* Fall semester.

422 Kinesiology II

2 credits. Advanced concepts of physical rehabilitation including theory bases of Bobath, PNF, Rood, and Brunnstrom. Joint mobilization principles for the treatment of pain and stiffness also included. *Occupational Therapy majors only.* Spring semester.

424 Occupational Therapy in School Systems

1 credit. Examination of the school system as a setting for occupational therapy services. Topics will include federal legislation, multi-disciplinary collaboration, roles and functions of occupational therapists, and characteristics which differentiate the school system from other areas of OT practice. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring Semester.

471 Level II Fieldwork—Physical Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of physical rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum scores on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Prerequisites: All academic course work, Occupational Therapy 398, and CPR certification if required by the facility. Occupational Therapy majors only.* Summer or fall semester.

479 Level II Fieldwork – Specialty

No credit. Variable length of Level II Fieldwork experience in area of student's interest. Arranged on an availability basis. *Prerequisites: Occupational Therapy 398 and 471. Occupational Therapy majors only.* Fall semester.

481-488 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

Department of Philosophy

Professors Spiegler, Sutphin (*Chair*)
Associate Professor Matteo

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A major in philosophy requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. Required courses are: Philosophy 105, 115, 180, 201, 240, 310, and 490; two courses from 302, 313, and 320; and a three credit departmental elective.

A minor in philosophy requires: Philosophy 105, 110 or 180, 115, 201, 240 or 310, and three credits from 240, 302, 310, 313, or 320.

105* Introduction to Philosophy

3 credits. (**Cultural Heritage and Old Core**) An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Prof. Sutphin.

110* Logic and Critical Thinking

3 credits. (**Power of Language**) A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and

truth. The nature of inference from premises to conclusion, rules for deductive and inductive process; informal inferences and fallacies, and theory of definition. *Prerequisite: Mathematics 011 (competency).* Prof. Sutphin. *NOTE: A student who has received credit for English 150 to satisfy the Power of Language requirement may not enroll in Philosophy 110. Philosophy 110 is available only to those students with English 150 placement level.*

115* Ethics

3 credits. **(Values and Choice and Old Core)** A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo.

180* Symbolic Logic

3 credits. **(Mathematical Analysis)** Studies the methods of such formal rational procedures as syllogistic, propositional, quantificational, and modal logic, and the informal procedures of inductive reasoning, meaning and definitions, and informal topics including fallacies. *Prerequisite: Mathematics 011 competency.* Prof. Sutphin.

201* Ancient and Medieval Philosophy

3 credits. **(Cultural Heritage and Old Core)** An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Prof. Sutphin.

240 Modern Philosophy

3 credits. **(Old Core)** A study of enduring issues in the writings of the 17th and 18th century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. **(Old Core)** A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. **(Old Core)** The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Matteo.

310 Contemporary Philosophy

3 credits. **(Old Core)** A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Prof. Sutphin.

313 Philosophy of Science

3 credits. **(Old Core)** An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Prof. Sutphin.

320 Philosophy of Religion

3 credits. **(Old Core)** A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Prof. Sutphin.

371-79 Special Topics in Philosophy

3 credits. **(Old Core)** A constantly changing specialized study within the

field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480-89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Grk 111* Introduction to Classical Greek

3 credits. **(Cultural Heritage)** An introduction to the Attic dialect of classical Greek, including phonetics, manuscript, inflection, and the basic grammar and vocabulary. Translation of selected passages of classical Greek literature, including the Apologia Socratous, from the original Greek into English. Introduction to the culture and literary genres of classical Greece.

Department of Physical Education and Health

Associate Professors Ober (*Chair and Athletic Director*),
Kauffman

Assistant Professor Whitmore

Staff: Drazkowski, Roderick, Schlosser

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social and moral standards, such as sportsmanship, teamwork, tolerance, and other character traits which come from properly conducted play.

All students are required to take three semester hours of physical well being courses, of which at least two must be activity courses. They may be satisfied by any of the courses offered in the Department of Physical Education, except PE 285. No more than five (5) credits of physical well being courses may be counted toward the graduation requirement.

105* Swimming

1 credit. **(Physical Well Being and Old Core)** Instruction in the basic strokes, survival swimming, and water safety.

115* Physical Fitness and Wellness

1 credit. **(Physical Well Being and Old Core)** Instruction in cardiovascular-type activities, strength, flexibility, weight control, nutrition, myths, physical activity, injury prevention and rehabilitation, safety, fitness equipment, stress, relaxation, games, exercises, and the consumer-personalizing fitness, aerobic exercises.

118 Water Safety Instruction

1 credit. **(Old Core)**

120* Aerobics

1 credit. (Physical Well Being and Old Core) Inspiration - perspiration: a diversified fitness program that will give a complete workout.

125* Tennis

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

130* Bicycling

1 credit. (Old Core)

140* Bowling

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

145* Field Hockey/Volleyball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

146* Racquetball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

150* Volleyball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

161-163* Adapted Physical Education

1 credit. (Physical Well Being and Old Core) Individual activity or collective exercise adapted to needs and abilities of the student.

165* Golf/Badminton

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

175* Archery/Badminton

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

181-184 Self-directed Physical Education Activity

1 credit. (Old Core) For the student who attends Evening Division, studies abroad, or has extenuating circumstances which prohibits the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

185* Basketball

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

190* Horsemanship

1 credit. (Physical Well Being and Old Core) Basic riding positions, balance, equine safety. Discuss equine behavior, care, tack, styles, and management.

194* Skiing

1 credit. (Physical Well Being and Old Core)

195* Soccer

1 credit. (Physical Well Being and Old Core) Rules, playing techniques, and skill development.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades. *Required of Elementary Education and Early Childhood Education majors.*

Department of Physics

Including Earth Science and Engineering

Professor Ranck

Associate Professors Leap, Thompson

Assistant Professors Ferruzza (*Chair*), Stuckey

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in science and technical fields. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, all intended to cultivate an ability for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in the department commonly go on to graduate school or to careers in physics, engineering, computer technology, or education.

Programs in Physics

Programs in physics lead to the B.S. degree. The **physics major** is preparation either for graduate school or for the technical job market. The **engineering physics major** is a practical program designed to lead to a technical career in industry. The **chemical physics major** combines study in the fields of physics and chemistry. The **secondary education major in physics** and the **general science education major** (with a concentration in physics), offered in conjunction with the education department, lead to Pennsylvania teacher certification at the secondary level.

Programs in Engineering

Engineering majors in the 3/2 program study for three years at Elizabethtown College and two years at The Pennsylvania State University. Upon completion of the program, the B.A. degree is awarded by Elizabethtown College and the B.S. degree by The Pennsylvania State University. Engineering students in the 3/2 program who maintain a 3.0 cumulative average at Elizabethtown College are guaranteed admission to the College of Engineering at The Pennsylvania State University.

The Elizabethtown College four-year engineering programs, which lead to the B.S. degree, are preparation for technical careers in industry. The **computer engineering major** combines studies of engineering and computer technology, including both hardware and

software. The **industrial engineering major** combines engineering physics with business administration.

Physics majors are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 421, 422, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 and 113; and Computer Science 115.

Engineering physics majors are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 361, and either 242 or 262; Mathematics 121, 122, 201, 222, and 321; Engineering 118; Computer Science 115; Chemistry 105 and 113; and Economics 101.

Chemical physics majors are required to take Physics 101, 102, 202, 221, 221L, 241, 301, 302, 321, 351, 421, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Computer Science 115; and Chemistry 113, 114, 344, and 352.

Secondary education majors in physics are required to take Physics 101, 102, 202, 221, 221L, 241, 242, and 321; Earth Science 215; Chemistry 105 and 113; Biology 105, 105L, 108, and 108L; Mathematics 121 and 122; Computer Science 115 or 121; and Education 205, 230, 305, 415, and 473.

General science education majors (with a concentration in physics) fulfill the course requirements listed in the interdisciplinary section of this catalog.

At Elizabethtown College, **engineering students in the 3/2 program** are required to take Physics 101, 102, 202, 221 and 221L or 301 and 302, 241, 242 or 321, 262, 351, and 361; Engineering 118; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 (114 for Chemical Engineering majors) and 113; Computer Science 115; Economics 101; and English 100 or 150, and 382. Students in the 3/2 pre-engineering program are exempt from one three credit course in *either* the Cultural Heritage or Social World area of understanding.

Computer engineering majors are required to take Physics 101, 102, 202, 221, 221L, 241, 242, 301, 302, 321, 351, and 361; Mathematics 121, 122, 201, 222, and 321; Computer Science 121, 122, 221, 222, and 332; Engineering 118; Chemistry 113; and Economics 101.

Industrial engineering majors are required to take Physics 101, 102, 202, 241, 321, 361, and either 242 or 262; Engineering 118 and 411; Mathematics 121, 122, 151, 201, and 222; Accounting 305; Computer Science 115; Chemistry 105 and 113; Economics 101 and 102; Business Administration 265, 369, 466, and either 330 or 468; either Business Administration 248 or Mathematics 331; either Business Administration 355 or English 382; and Psychology 105.

Minors in physics are required to take Physics 101, 102, 202, 221, 221L, and six additional credits in physics.

101* Physics I

4 credits. **(The Natural World and Old Core)** Introduction to the basic concepts of mechanics, classical kinematics and dynamics (linear and rotational motion, force and torque, energy), friction, statics, fluids, kinetic theory of matter. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite or Corequisite: Mathematics 117.* Fall semester. Prof. Ferruzza.

102 Physics II

4 credits. **(Old Core)** A continuation of Physics 101. Introduction to the basic concepts of electricity, magnetism, geometrical optics, interference and diffraction, and brief introductions to relativity, quantum theory, atomic and nuclear physics, and elementary particle physics. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

112 Astronomy

4 credits. **(Old Core)** A study of the structure and evolution of stars, planetary systems, galaxies and the universe. Less familiar astronomical objects such as black holes, quasars, cosmic strings, texture, and wormholes are also studied. Laboratories provide an opportunity to observe planets, stars, clusters, and galaxies; they also provide practical experience in determining astronomical quantities. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Normally spring semester, but fall semester in 1992-93. Prof. Stuckey.

113* Spacetime Physics

4 credits. **(The Natural World and Old Core)** A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114* Cosmology

3 credits. **(The Natural World)** A non-mathematical study of the origin, evolution, structure, and future of the universe according to various scientific theories. The history of cosmology and its interactions with society. Worldviews associated with nihilism, existentialism, holism, reductionism, the anthropic principles, and the theistic principle. Spring semester. Freshman Seminar in fall. Prof. Stuckey.

202 Physics III

4 credits. **(Old Core)** An introduction to special relativity and mathematical methods for physicists and engineers. Special relativity topics include time dilation, length contraction and the energy content of matter. Mathematical techniques involved in describing physical phenomena such as waves and energy transfer are studied. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 102; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Stuckey.

216* Quantum Theory and Reality

3 credits. **(The Natural World)** A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Spring semester. Prof. Ranck.

221 Modern Physics (Chemistry 343)

3 credits. **(Old Core)** Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

221L Modern Physics Laboratory (Chemistry 346)

2 credits. Experiments relating to the atomic nature of matter and the interaction of radiation with matter. Introduction to special computational techniques appropriate for the experiments. *Corequisite: Physics 221 or Chemistry 343.* Fall Semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Prof. Rutter.

242 Computer Systems Interfacing (Computer Science 333)

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. [Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

262 Statics & Dynamics

3 credits. Equilibria of particles and rigid bodies subject to concentrated and distributed forces, with practical applications to mechanical systems. Topics include unbalanced forces, work and energy, and impulse and momentum. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

301 Mechanics

3 credits. (Old Core) An intermediate course in mechanics. Newtonian mechanics of systems of particles, central forces, oscillations, collisions, rigid-body dynamics, and the Lagrangian and Hamiltonian formalisms for generalized coordinates. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, 321.* Fall semester. Staff.

302 Electromagnetism

3 credits. (Old Core) An intermediate course in electromagnetism, including electro- and magnetostatics and dynamics, Maxwell's equations, macroscopic fields, electromagnetic waves, and special relativity. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Staff.

321 Thermal and Statistical Physics

3 credits. (Old Core) The principles of thermodynamics, including variables and equations of state, the laws of thermodynamics, heat engines, phase transitions, blackbody radiation, heat transfer, and kinetic theory. *Prerequisite: Physics 102.* Fall Semester. Prof. Ferruzza.

351 Advanced Physics Laboratory

2 credits. Advanced laboratory courses with experiments in modern physics, electricity and magnetism, optics, and thermodynamics. A wide variety of experimental techniques and analyses are used. Individual experimental design is emphasized. Hours: laboratory 6. *Prerequisites: Physics 202, 221, 241.* Fall semester. Prof. Stuckey.

361 Engineering Practices Seminar

1 credit. Weekly presentations and discussions by students and faculty of practices, techniques, and topics in the engineering profession. *Prerequisite: permission of instructor.* Fall semester. Prof. Ferruzza.

371-379 Topics in Physics

Variable credits. (Old Core) Topics in physics not covered in other courses. *Prerequisite: Permission of instructor.* Alternating Fall and Spring semesters. Staff.

421, 422 Quantum Physics I, II

3 credits. (Old Core) Quantum theory, including the formalisms of Schrodinger, Heisenberg, and Dirac; the uncertainty principles; quantum solutions to problems in classical mechanics; spin-1/2 systems; scattering theory perturbation theory; atomic physics; Bose-Einstein and Fermi-Dirac statistics for many-particle systems; and the interaction of radiation with matter. *Prerequisites: Physics 221, 301, and 302.* Fall semester, spring semester. Staff.

423 General Relativity

3 credits. (Old Core) An introduction to calculus on manifolds, differential topology, exterior calculus, affine geometry, Riemannian geometry, special relativity, and general relativity with applications to relativistic cosmology. *Prerequisites: Mathematics 122 and 201 or permission of the instructor.* Spring semester. Prof. Stuckey.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of instructor.* Staff.

491, 492 Research I, II

3 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of instructor.* Fall semester, Spring semester. Staff.

Earth Science

ES 105 Field Earth Science

8 credits. (Old Core) An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite: Permission of instructor.* Summer session. Prof. Thompson.

ES 111* The Dynamic Earth

4 credits. (The Natural World and Old Core) An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity and geological time. Hours: lecture 3, laboratory 2. Fall semester, Spring semester. Prof. Thompson.

ES 112* The Geology of Landscape

4 credits. (The Natural World and Old Core) The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. Fall semester. Prof. Thompson.

ES 215* Meteorology

3 credits. (The Natural World) General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Standard weather maps are used. Fall and spring semesters. Prof. Thompson.

ES 215L* Meteorology Laboratory

1 credit. (The Natural World) Comprehensive meteorological analysis to include a 3 dimensional structure of the atmosphere. *Prerequisite or corequisite: ES215.* Offered in summer, only when ES215 is offered. Staff.

ES 371-379 Special Topics in Earth Science

Variable credits. (Old Core) Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite: Permission of instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. (Old Core) Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of instructor.* Prof. Thompson.

Engineering

ENGR 118 Engineering Methods & Graphics

3 credits. Introduction to engineering communication through graphics (projections, pictorials, dimensioning, working drawings, graphs, and spatial relationships). Instruction and practical exercises in computer graphics, including computer aided design (CAD). Hours: lecture 2, laboratory 6. Spring semester. Prof. Ferruzza.

ENGR 411 Work Measurement, Quality Assurance, and Human Factors

3 credits. Production management with emphasis on process improvement, work measurement, cost reduction, application of statistical techniques to quality assurance; and ergonomics. *Prerequisite: Business*

Department of Political Science

Professors Gottfried, Selcher (*Chair*)

Associate Professors Beyerlein, McClellan, McDonald

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessperson. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 111, 112, 223, 224, 245, 330, 351, and 361, Sociology 331, and twelve credits of political science electives. In addition, at least one semester of a modern foreign language at the 112 level or higher is required. General electives from the other social sciences are encouraged.

For a minor in political science, the student must successfully complete 21 hours of course work, composed of the following political science courses: 111, 112, 223 or 224, 245, and 351 or 361, and two elective 300/400-level courses. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/ public relations: Political Science 318, 323; (2) law/paralegal/ criminal justice: Political Science 311, 326; (3) international affairs: Political Science 345, 352, 353, 444; (4) political theory: Political Science 324, 326; (5) public administration: Political Science 471; and (6) business administration: Political Science 366.

Students majoring in political science may elect a *concentration in public administration*. This includes Political Science 471; Business Administration 376 (Decision-Making in the Public Sector); Economics 101; and Sociology 360. Students not majoring in political science may choose a minor in public administration, and should consult the interdisciplinary section of this catalog for further information.

The Department participates in the secondary school certification in social studies program, the forestry and environmental management major, and the environmental science major, offering a political science or a public policy concentration.

105* Western Political Heritage

3 credits. (**Value and Choice and Old Core**) An introduction to the major political thinkers of the Western political tradition from Plato to Lenin. Justice, equality, rights, freedom, order and community are among some of the ideas to be examined from a variety of critical and historical perspectives. Prof. McDonald.

111* American National Government

3 credits. (**The Social World and Old Core**) Analysis of the development of the U.S. Constitution, the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Prof. McClellan.

112 State and Local Government

3 credits. (**Old Core**) Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Spring semester. Prof. McClellan.

223 History of Western Political Thought I: Ancient and Medieval

3 credits. (**Old Core**) A survey of major political thinkers from Plato until Marsilio of Padua. Self, politics, nature, order and freedom will be among the topics examined. Prof. McDonald. *Students who have received credit for Political Science 222 may not enroll in this course.*

224 History of Western Political Thought II: Renaissance to the Moderns

3 credits. (**Old Core**) A survey of major political thinkers in the West and their writings from Machiavelli through Rawls. Self, politics, nature, order, rights and freedom will be among the topics examined. Prof. McDonald. *Students who have received credit for Political Science 222 may not enroll in this course.*

245* International Relations

3 credits. (**Foreign Cultures and International Studies and Old Core**) Survey of the basic units of analysis, concepts, and principles of global international relations, with emphasis on the formulation and implementation of foreign policy in the context of political, economic, military, and cultural factors. Prof. Selcher.

311 Constitutional Law

3 credits. (**Old Core**) History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Prof. Gliptis.

313 The American Presidency

3 credits. (**Old Core**) An examination of the development of the modern presidency as institution, symbol, and policy-maker. Topics to be covered include the nature of presidential power, the institutional presidency, relations with the public and governmental institutions in the U.S., and policy leadership in foreign and domestic affairs. Prof. McClellan.

316 The American Electoral Process (Campaign '92)

3 credits. **(Old Core)** Analysis of the process of recruiting, nominating, and electing candidates for national office in the U.S., the major participants in national elections, and the impact of elections on public policy-making. Prof. McClellan.

318 Mass Media and American Politics

3 credits. **(Old Core)** Analysis of the role and influence of the mass media in American politics, emphasizing the development of the media industry and its relations with government, the political communications process, and the impact of the media on public opinion, elections, and public policy-making. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. **(Old Core)** An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects for nuclear war are among some of the topics examined. Prof. McDonald.

324 Modern Ideologies

3 credits. **(Old Core)** A survey of Marxism, socialism, anarchism, liberalism and conservatism, and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

326 American Political Thought

3 credits. **(Old Core)** Historical analysis of major American political thinkers from the Puritans to the present with special consideration given to the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. Prof. Kraybill.

345 American Foreign Policy

3 credits. **(Old Core)** U.S. foreign relations since World War II, within an integrated analytical approach to identify the characteristic processes of decision-making and the patterns of those decisions over the decades. Prof. Selcher.

351 Comparative Governments

3 credits. **(Old Core)** A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

352 Latin American Politics

3 credits. **(Old Core)** Political culture and processes, with country studies and development models to illustrate political styles and approaches to current issues. Spring semester. Prof. Selcher.

353 Politics of Developing Nations

3 credits. **(Old Core)** An interdisciplinary analysis of issues of political development, with application to specific case studies of contemporary nation-building in transitional societies. Prof. Selcher.

361 Public Administration

3 credits. **(Old Core)** A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

366 Government and Business

3 credits. **(Old Core)** An examination of relations between the public and private sectors, and of specific public policies toward business such as antitrust, economic and social regulation, and trade. Prof. McClellan.

370-379 Special Topics

3 credits. **(Old Core)** Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

444 U.S. Security Policy

3 credits. **(Old Core)** Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite: Political Science 245 or 345 or permission of instructor.* Prof. McDonald.

471 Capital Semester Internship

6 credits. Applied field experience in politics and public administration for state or local government agencies, the state legislature, and private political organizations. *Prerequisites: Political Science 361 and permission of instructor.* Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Professors Dennis, Ellsworth (*Chair*)
Associate Professors Eiserer, Teske
Assistant Professors Dillon, Rider

Bachelor of Arts

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers the Bachelor of Arts degree. The department also offers a minor in psychology with two tracks, one in general theory and methods; the other in child psychology. The department also offers a concentration for students pursuing the secondary education certification in social studies. See the interdisciplinary section of this catalog.

Courses required for the *bachelor of arts* degree are Psychology 105, 106, 213, 218, 222, 225 and 425 or 235 and 435, 317, 321, 402, and 413 or 414.

Courses required for the *general psychology minor* track are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/ 400) courses. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

Courses required for the *child psychology minor* track are Psychology 105, 225, 333, 334, and six credits of Psychology electives.

105* General Psychology

3 credits. **(The Social World and Old Core)** An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. **(Old Core)** The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105. Spring semester. Prof. Ellsworth.

201 Addictions

1 credit. The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite:* Psychology 105 or permission of the instructor. Staff.

208* Health Psychology

3 credits. **(Natural World and Old Core)** A study of physiology and neuro-chemistry of pain and stress related illness and those behaviors that contribute to illness. Consideration is given to philosophical questions of the mind-body relationship and the practical question of compliance with treatment regimens and the ethical question of self-determination. Fall semester. Prof. Ellsworth.

213 Research Methods

4 credits. **(Old Core)** The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 105 Fall semester. Prof. Ellsworth.

218 Psychological Statistics

3 credits. Statistics in psychology, including percentiles, standard scores, t-tests, analysis of variance, correlation, regression and prediction, Chi square and other selected procedures. Emphasizes statistical reasoning, as well as application to psychological contexts. *Prerequisite:* Psychology 213. Spring semester. Prof. Dillon.

221 Abnormal Psychology

3 credits. **(Old Core)** A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite:* Psychology 105. Spring semester. Prof. Dennis.

222 Physiological Psychology

3 credits. **(Old Core)** Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite:* Psychology 105. Spring semester. Prof. Eiserer.

225 Developmental Psychology

3 credits. **(Old Core)** Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite:* Psychology 105. Prof. Rider.

235 Social Psychology

3 credits. **(Old Core)** The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as self-perception, impression formation, attitudes, social influence, aggression, relationships, inter-personal communication, and environmental transaction. *Prerequisite:* Psychology 105. Prof. Teske.

237* Psychology of Women

3 credits. **(The Social World)** A psychological approach to understanding both the behavior of women and the female experience. Topics include development across the lifespan; language; victimization; sexuality; mental health; and stereotype-based conflicts. Guest speakers discuss special topics. Students receive experience in methods of behavioral study and also engage in self-evaluation of gender-related lifestyles and values. Prof. Eiserer.

252 Psychology of Music

2 credits. Study of acoustics and the Psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite:* music major or permission of instructor. Spring semester. Prof. Rohrbacher.

317 Learning

4 credits. **(Old Core)** Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite:* Psychology 213. Fall semester. Prof. Eiserer.

321 Theories of Personality

3 credits. **(Old Core)** A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite:* Psychology 105 and permission of the instructor. Fall semester. Prof. Teske.

333 Tests and Measurements

3 credits. A study of the theoretical and practical considerations of evaluation and psychological measurement. Emphasis is on test construction and interpretation. *Prerequisite:* Psychology 105. Fall semester. Prof. Dillon.

334 Exceptional Children and Youth

3 credits. **(Old Core)** A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite:* Psychology 225 or permission of instructor. Spring semester. Prof. Rider.

371-379 Special Topics

Variable credit. **(Old Core)** Study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite:* permission of instructor. Staff.

401 Counselling Psychology

3 credits. **(Old Core)** An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites:* Psychology 105 and permission of instructor. Fall semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. **(Old Core)** A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite:* Psychology 105. Fall semester. Prof. Dennis.

413 Perception

3 credits. **(Old Core)** A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of the instructor. Spring semester 1993. Prof. Eiserer.

414 Memory and Thinking

3 credits. **(Old Core)** A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite:* Psychology 213 or permission of the instructor. Spring semester 1994. Prof. Ellsworth.

425 Advanced Development Psychology

3 credits. **(Old Core)** A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project. *Prerequisites:* Psychology 213, 225, and at least junior standing, or permission of the instructor. Fall semester 1993. Prof. Rider.

435 Advanced Social Psychology

3 credits. **(Old Core)** A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites:* Psychology 213 and 235 or permission of instructor. Fall semester 1994. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites:* Psychology 105 and permission of instructor. Prof. Dennis.

480-489 Independent Study

Variable credit. **(Old Core)** This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite:* permission of instructor. Staff.

491-492 Research Practicum

Variable credit. **(Old Core)** Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites:* Psychology 213 and permission of instructor. Staff.

Department of Religious Studies

Professors: Clemens, Durnbaugh,
Puffenberger (*Chair*)

Associate Professor Crocker
Assistant Professor Bucher

Bachelor of Arts

The Department of Religious Studies seeks to broaden the student's liberal education by pursuing creative ventures which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a pluralistic religious milieu. Because of this diversity, the study of religion includes a variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this

light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religious Studies major is designed to serve as a preprofessional foundation for those students wishing to pursue study beyond the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields). The student plans a major in consultation with the department faculty and chair to assure a balanced blend of courses in several subject areas.

A *major* in Religious Studies consists of twelve courses (36 hours) which includes the three-hour Senior Research Project/Thesis. The program of study must include at least one course from each of the following four categories: biblical studies, ethics and theology, comparative religions, and peace studies. The Department of Religious Studies requires the study of a modern foreign language at the college level for one full year. Any student planning to pursue graduate work should also take Greek and/or Hebrew.

A *minor* in Religious Studies consists of six courses (18 hours). One's selection must include at least three of the above listed categories.

See Interdisciplinary Programs for the details of the minor programs in Peace and Conflict Studies and Anabaptist and Pietist Studies.

101* The Religious Literature of Ancient Israel

3 credits. **(Cultural Heritage and Old Core)** An introduction to the literature of ancient Israel (i.e., the Jewish Tanakh/Christian Old Testament), focusing on developing skills of historical-critical exegesis. Prof. Bucher.

102* The Religious Literature of Early Christianity

3 credits. **(Cultural Heritage and Old Core)** An introduction to the literature of early Christianity, primarily that found in the New Testament. The course focuses on the development of the skills of historical-critical exegesis. Prof. Bucher.

105* Forms of Religious Experience

3 credits. **(Value and Choice and Old Core)** A survey of the basic categories needed for an understanding of religious phenomena. Attention given both to formal expressions and substantive experiencing, with emphasis upon mystical intuition. Myth, symbol, and imagery is of special interest. Prof. Clemens.

165* Introduction to Peace and Conflict Resolution

3 credits. **(Value and Choice and Old Core)** The foundation course in the peace studies minor. Investigates causes of conflict and alternate modes of resolution, including mediation. Prof. Clemens.

170-179 Special Topics in Religion

3 credits. **(Old Core)** Courses of an experimental nature offered occasionally at the freshman-sophomore level. Includes such topics as: The Social World of Ancient Israel, The Social World of Early Christianity, etc. Staff.

201 Ancient Near Eastern Religions

3 credits. **(Old Core)** Introduces the major religious traditions of the ancient Near East: the religions of the Sumerians, Babylonians, Assyrians, Canaanites, Israelites, and Egyptians. It examines the

theology, worldview, and religious practices of each of these traditions. Prof. Bucher.

202 Archaeology and the Bible

3 credits. **(Old Core)** Introduces the basic principles, techniques, and theoretical assumptions of archaeology as practiced in the Middle East. Surveys the major archaeological discoveries that have shed light on the Bible and biblical history. *Prerequisite: permission of the instructor.* Prof. Bucher.

205 Contemporary Religious Issues

3 credits. **(Old Core)** A survey of relevant problems and issues on the contemporary American religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism in America. Staff.

213* Religion and Gender

3 credits. **(Values and Choice and Old Core)** Introduces students to contemporary theological discussions originating with feminist critiques of religion. Examines the way in which an androcentric perspective has influenced religious language, beliefs, and practices.

215* Social Ethics

3 credits. **(Values and Choice and Old Core)** The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens.

221 Western Religions

3 credits. **(Foreign Cultures and International Studies and Old Core)** An introduction to the major religious traditions of the Near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. **(Foreign Cultures and International Studies and Old Core)** An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shintoism. Prof. Puffenberger.

225 Anabaptist and Pietist Movements

3 credits. **(Old Core)** A study of the European historical and theological backgrounds of the Anabaptist and Pietist movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Prof. Durnbaugh.

230 Religion in America

3 credits. **(Old Core)** Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, as well as the identity and integrity of each separate tradition. Prof. Clemens.

255 Business Ethics

3 credits. **(Old Core)** A critical analysis of contemporary ethical dilemmas in the context of American business practice. Utilizes normative ethical theory, Kohlberg's model of moral development, and case study analyses as a way to clarify competing ethical principles and to evaluate differing ethical judgments. Prof. Puffenberger.

310 Biblical Perspectives on Peace and Justice

3 credits. **(Old Core)** An examination of the ways in which the values of peace and justice were understood and practiced in the ancient Israelite and early Christian communities. *Prerequisite: Rel 101 or 102 or permission of the instructor.* Prof. Bucher.

315 Issues in Death and Dying

3 credits. **(Old Core)** A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. Presupposes

the notion that the best preparation for life is an in-depth study of its nonexistence. *Prerequisite: permission of the instructor.* Prof. Puffenberger.

317 Sociology of Religion (Sociology 317)

3 credits. **(Old Core)** An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

335 Renaissance and Reformation History (History 315)

3 credits. **(Old Core)** A study of the civilization of the Renaissance in Italy, with emphasis on Florence, Erasmus, and the Protestant Reformation of the sixteenth century. Prof. Durnbaugh.

351 Religion and Violence

3 credits. **(Old Core)** A study of the reasons for hatred and war as well as a survey of the tension between patriotism and faith as found in the traditional and quasi-religions of our day. Critically examines the ideas of just war, pacifism, non-violent resistance, etc. Prof. Puffenberger.

355 Bio-Ethics

3 credits. **(Old Core)** A critical examination of the ethical problems that arise in the practice of medicine and the pursuit of biological and medical research. Its case study approach wrestles with the task of determining not only how ethical principles apply, but how to order the principles when not all of them can be followed. Prof. Puffenberger.

357 The Church's Role in Social Change

3 credits. **(Old Core)** Combines historical and topical consideration of the church's posture toward the state and social change. An applied section views current tense situations in order to arrive at a tenable position on the church's role. Prof. Clemens.

361 Anabaptist and Pietist Groups to 1850 (Sociology 361)

3 credits. **(Old Core)** Introduces the spectrum of groups: Brethren, Mennonites, Amish, Inspirationalists, Moravians, The Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Notes their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival and revolution. Prof. Durnbaugh.

362 Anabaptist and Pietist Groups since 1850 (Sociology 362)

3 credits. **(Old Core)** Examines the processes of adaptation, schism, and withdrawal in these groups as they respond to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren, and Mennonite); defensive and accommodation processes; and contemporary religious expressions. Prof. Durnbaugh.

363 Pacifism Among Anabaptist and Pietist Groups (Sociology 363)

3 credits. **(Old Core)** Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government, the pacifist compromises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to civil rights and justice issues. Probes growing interdenominational and international peace discussions and cooperations in the 1980's. Prof. Durnbaugh.

364 Amish Society (Sociology 364)

3 credits. **(Old Core)** An introduction to the history, culture, and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society (Sociology 365)

3 credits. **(Old Core)** Beginning with a review of sociological theory on

modernization, this course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience for the Anabaptist and Pietist Studies minor, this seminar's topics and groups will vary from year to year. *Prerequisite: permission of the instructor.* Prof. Kraybill.

370-379 Special Topics in Research

3 credits. **(Old Core)** Courses offered occasionally on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest. Includes such topics as: Liberation Theology; Evangelical Theology; Civil Religion; Esoteric Religions; Utopian Communities; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; Prophecy and Apocalyptic Thought; Wisdom Literature; Islamic Thought; Eastern Scriptures; Biblical Hebrew; New Testament Greek; Jesus and the Gospel Tradition; Mysticism; Psychology and Religion; etc. Staff.

465 Directed Research Project (for Peace Studies minors)

3 credits. A capstone seminar designed to integrate previous work and produce a major research paper. Staff.

470-479 Internship

1-3 credits. Designed to give the individual student the opportunity to pursue an experiential learning experience in an area of major interest under the guidance of a department member. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religious Studies minors by special request. Staff.

490 Senior Research Project/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Social Work

Assistant Professors Bergel (*Chair*), L. Martin,
McFarland

Bachelor of Arts

Social Work is a multi-faceted profession concerned with change both on an individual, community, and national level. Within the framework of a liberal arts tradition, Elizabethtown's social work program prepares the student for entry into professional social work practice. The program also prepares students to enter graduate school. The program is based on an understanding of generalist practice which allows the graduate to choose from a wide range of social service careers.

The *major* in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. The program is accredited by the Council on Social Work Education.

The program provides an extensive opportunity for field experience, beginning with the sophomore year. The major culminates with 600 hours of field instruction during the student's senior year. Field experiences are arranged to meet the student's individual interest. Field experiences include but are not limited to such areas as child welfare, corrections, mental health, rehabilitation, health care, schools, and aging.

The Social Work Major requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. Two reference rating forms completed by persons who know the applicant well and a short essay describing the applicant's interest in the field of social work.
3. Formal admittance to Elizabethtown College.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The *Social Work Major* requires the following courses: Biology 105, Sociology 101, 220, Psychology 105, Political Science 111, Economics 101, Mathematics 151, Modern Language 112, Social Work 151, 180, 233, 280, 330, 367, 368, 369, 401, 470, 471, and 498.

151* Social Welfare Issues in Contemporary Society

3 credits. **(The Social World)** The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Six hours of volunteer experience are required. Spring semester. Profs. Martin, McFarland.

180* Interpersonal Helping Skills

3 credits. **(The Social World)** Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

233* Human Behavior in the Social Environment

3 credits. **(The Social World)** A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. *Prerequisites: Sociology 101, Psychology 105.* Fall semester. Prof. McFarland.

280 Rural & Urban Social Welfare Systems

3 credits. A comparison of urban and small town rural areas. The development and organization of rural and urban communities; their network of services designed to address community, family, and

individual problems; community development and administration of social service programs. Volunteer experience required. *Prerequisite: Social Work 151*. Spring semester. Prof. Bergel.

330 Methods of Social Work Research (*Sociology 330, Political Science 330*)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or co-requisite: Mathematics 151*. Fall semester. Staff.

339 Human Sexuality

3 credits. A study of socio-sexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Prof. McFarland.

344 Aging: Social Response and Implications

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Field trips to social service agencies. Prof. McFarland.

355 Women in Society

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Prof. Bergel.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Prof. Martin.

366 Addiction and Society

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 180. Social Work majors only*. Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367. Social Work majors only*. Spring semester. Staff.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Social Work majors only*. Spring semester. Prof. Martin.

371-379 Special Topics in Social Work

3 credit. Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social economic, and political systems. *Prerequisites: Political Science 111, Economics 101*. Fall semester. Prof. Martin.

470 Introductory Field Instruction

3 credits. Supervised field instruction for a least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways

as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. *Social Work majors only*. Fall semester. Prof. Martin.

471 Advanced Field Instruction

12 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner. *Prerequisite: permission of instructor; co-requisite: Social Work 498. Social Work majors only*. Spring semester. Prof. Martin.

481-489 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite: permission of instructor*. Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite: Social Work 470; co-requisite: Social Work 471. Social Work majors only*. Spring semester. Prof. Bergel.

Department of Sociology and Anthropology

Professor Kraybill

Associate Professor Lehr (*Chair*)

Assistant Professors Dorsten, Wheelersburg

Bachelor of Arts in Sociology-Anthropology

The program of this department provides for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social services, law, and business administration. Some move directly into careers in personnel work, social research, adult and juvenile probation, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers a major in sociology-anthropology that leads to a bachelor of arts degree. The department also offers minors in sociology and in anthropology.

The major in sociology/anthropology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities.

The department also participates in the secondary education certification in social studies offering sociology-anthropology concentrations. Interested students should

consult the detailed descriptions in the interdisciplinary section of this catalog.

A sociology-anthropology major requires Sociology 101, 204, 302, 330, 331, 364, and 498; Anthropology 111, 201, and 360; an Anthropology elective; and one other elective course in the department.

The Anthropology minor requires 18 credit hours which include: Sociology 101; Anthropology 111 and 201; two courses selected from Sociology 204, 364, and Anthropology 360; and one course from Anthropology 306, 307, or 308.

The Sociology minor requires 18 hours of course work including Sociology 101, 204, 302, 330, and two Sociology electives.

Sociology

101* *Discovering Society*

3 credits. **(The Social World and Old Core)** An introductory course to the social world which presents an understanding of society and its impact on the individual. Using the sociological perspective, this course offers students an understanding of social reality, processes, and explanations. Staff.

204* *Population and Global Issues*

3 credits. **(Social World)** Critical analysis of scholarly and popular press views about the relationship of human population processes (fertility, mortality, migration) to major global social issues (e.g., poverty, health/disease, food/housing, shortages, environmental destruction) from the perspectives of sociology/social demography. Prof. Dorsten.

215 *Criminology*

3 credits. **(Old Core)** Sociological approaches to the study of crime, with emphasis on current sociological theory and research: special consideration of the judicial system and penology. Alternate fall semesters. Staff.

220 *Race and Ethnic Relations*

3 credits. **(Old Core)** Study of racial and cultural minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Staff.

301 *Social Issues*

3 credits. **(Old Core)** A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Staff.

302 *Sociological Theory*

3 credits. **(Old Core)** An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite:* Sociology 101. Staff.

305 *Marriage and the Family*

3 credits. **(Old Core)** A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 *Sociology of Religion*

3 credits. **(Old Core)** An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

330 *Methods of Social Research* (Political Science 330, Social Work 330)

3 credits. **(Old Core)** Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisite:* Sociology 101. Fall semester. Prof. Dorsten.

331 *Social Statistics*

3 credits. **(Old Core)** Basic introduction to the study of statistical procedures of social research and analysis, with emphasis on reasoning with data. *Prerequisite:* Sociology 330 or Political Science 330 or Social Work 330. Spring semester. Staff.

342 *Modern Corrections*

3 credits. **(Old Core)** An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Alternate spring semesters. Staff.

358 *Sociology of War and Peace*

3 credits. **(Old Core)** A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Staff.

360 *Organizations in Modern Society*

3 credits. **(Old Core)** An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Staff.

361 *Anabaptist and Pietist Groups Prior to 1850*

3 credits. **(Old Core)** Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Prof. Durnbaugh.

362 *Anabaptist and Pietist Groups Since 1850*

3 credits. **(Old Core)** Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Prof. Durnbaugh.

363 *Pacifism among Anabaptist and Pietist Groups, 1525-1985*

3 credits. **(Old Core)** Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government; the pacifist compromises of Moravians while protecting Indian converts; and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Fall semester. Prof. Durnbaugh.

364 *Amish Society*

3 credits. **(Old Core)** An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 *Anabaptist and Pietist Groups in Modern Society*

3 credits. **(Old Core)** Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of

modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience, the course will be conducted as a seminar with the topics and groups varying by year. Prof. Kraybill.

371-379 Special Topics in Sociology

3 credits. Readings and discussion of topical areas of sociology. Topics may include, but not be limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of instructor.* Staff.

481-489 Independent Study in Sociology

Variable credit. (Old Core) Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. (Old Core) The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of instructor.* Spring semester. Staff.

Anthropology

111* Understanding Human Cultures

3 credits. (Foreign Cultures and International Studies and Old Core) A comprehensive survey of the peoples and cultures of the world with special emphasis upon four interrelated cultural systems: knowledge, technology, social organization, and ideology. Staff.

201* Physical Anthropology

3 credits. (Natural World and Old Core) An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. *Prerequisite: one 100-level Natural World course.* Fall semester. Staff.

202 Cultural Anthropology

3 credits. (Old Core) An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

306 Indians of North America

3 credits. (Old Core) A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Staff.

307 Peoples and Cultures of Africa

3 credits. (Old Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. (Old Core) Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. (Old Core) Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Wheelersburg.

371-379 Special Topics in Anthropology

3 credits. (Old Core) Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Staff.

Spanish

See Department of Modern Languages, page 48.

Theatre

See Department of Fine and Performing Arts, pages 38.



Commencement in The Dell.

Interdisciplinary Programs

Premedical and Other Health Professions Programs

Paul Petersen and Martin O.L. Spangler (*Co-chairs, Health Professions Advisory Committee*)

Members: John A. Campbell, Jr., James L. Dively, Frederic E. Hoffman, Frank P. Polanowski, Zoe G. Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions, schools, and/or students. *The biology premedical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 18. A second route is the *bachelor of science degree* in biochemistry (see page 18). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown College, he or she will follow a curriculum similar to that outlined below, with minor variations depending upon several factors, such as the starting level in English and mathematics. After completion of the freshman year, students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Seven faculty members are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into schools of medicine; (2) to advise students on registration and preparation for medical school admissions tests; (3) to assist students in the preparation and submission of applications to medical schools; (4) to draft a composite letter of evaluation and endorsement for worthy candi-

dates and to forward this information to the appropriate medical school admissions committees; (5) to offer assistance in preparing for medical school interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical school placement for advising and administrative purposes.

The premedical student should introduce him or herself to the Health Professions Advisory Committee early in the freshman year and formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. Forms for this registration are available from Dr. Petersen. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during the spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During April of the junior year, the Committee will hold interviews with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. The Committee will also use information from the student's registration form and from letters of recommendation and endorsement that the student has solicited from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical school admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process him or herself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that premedical students notify the Committee of changes in status of their applications so that the Committee can plan for this important stage of the

admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

Representative First-Year Courses

Credits Fall Semester

3	Freshman Seminar
4	Biology 111
4	Chemistry 113
3	Power of Language*
4	Mathematics 121**

Credits Spring Semester

4	Biology 112
4	Chemistry 114
4	Foreign Cultures/International Studies**
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs or a master of science degree in physical therapy from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, cytogenetics, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology major, and the pre-allied health courses. If

accepted, the student then spends two or more years at Thomas Jefferson University in Philadelphia. After completing sufficient credits so that the total with those earned at Elizabethtown College will be at least 125, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science or master of science in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

Students are not limited to Thomas Jefferson University programs. Other Allied Health programs at other institutions of higher education may be used by the student for transfer of credit back to Elizabethtown College. However, these programs need to be approved by the Biology department and by the Registrar prior to the transfer of credit.

For additional details, the student should confer with Dr. J. Robert Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a Bachelor of Science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's Core Program in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program requirements and earning at least 101 credits before transferring to Duke. The student spends at least two years at Duke's School of the Environment. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional two or three semesters, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the

Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews. To insure acceptance, an applicant's G.P.A. should be at least 3.2.

There are variations of the schedule herein described. For additional details, the student should confer with Prof. Ronald L. Laughlin of the Department of Biology.

Majors must complete all Elizabethtown College Core Program requirements. Within the Core areas, the following courses should be taken:

Mathematical Analysis (three hours): Mathematics 151 or 121. If 151 is not taken for core, it is strongly recommended as an elective. If 121 is not taken for core, Math 117 will satisfy the calculus requirement, but not core.

Natural World (eight hours): Biology 111 and Chemistry 101.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313, 313L, 321; two courses from Biology 215-215L, 235, 331, 332, and 347; and Chemistry 105. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111 and 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 101, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political Science 111, 112, 361, 366, 471. Minor concentration recommendations are Political Science 361, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry 101*, 105*; Physics 101*, 102; two courses from Earth Science 111, 112, 215 or Physics 112; Mathematics 101 and 121, or 151 and 117 or 121; and Education 205, 230, 305, 415, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113 114, 213, 214; and eight hours from among Chemistry 116, 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology 111*, 112; two courses from Earth Science 111, 112, 215 or Physics 112; Physics 101*, 102; Mathematics 101, 121, 122; and Education 205, 230, 305, 415, and 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 221, 221L, 241, and 321; one additional course in physics (except 112) or engineering; Biology 105*-105L*, and either 106*-106L* or 108*-108L*; Chemistry 101*, 105*; two courses from Earth Science 111, 112, 215 or Physics 112; Mathematics 101, 121, 122; and Education 205, 230, 305, 415, and 473.

*Count towards **Natural World** Core Program requirement.

For additional details the student should confer with Dr. Frederick Hoffman of the Department of Biology.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are: Students must take one 24-hour major, and two courses in each of the four cognate areas. All students must take the professional education sequence Education 205, 230, 305, 415, and 473. Consultation with your advisor is suggested for appropriate courses in the subject matter areas.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics.

History: The 24-hour major must include History 115, 201, 202, 390, one European history course beyond 115; one non-United States, non-European history course, and six elective hours in history.

Political Science: The 24-hour major must include Political Science 111, 112, 223 or 224, 245, 330, 351, and six elective hours in political science.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 221, 225, 235, 321, and one elective in Psychology.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 204, 302, and 330; Anthropology 111; and

nine hours planned in consultation with and approved by the social studies advisors in the Departments of Sociology-Anthropology and Education.

Anabaptist and Pietist Studies Minor

The interdisciplinary minor in Anabaptist and Pietist Studies consists of 18 credit hours. The curricular model incorporates three types of courses: a required introductory course (3 hours.); elective courses in a variety of disciplines (12 hours.); and a capstone seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

The introductory course (Rel 225) is designed to orient students to the European historical and theological roots of the Anabaptist and Pietist movements. The elective courses, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which draws on the resources of three academic disciplines. The *capstone course* (Rel/Soc 365) is a seminar experience which requires students to integrate and synthesize the insights from several disciplines in a major research writing project. At least two faculty members from differing academic disciplines will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. Program advisor: Dr. William V. Puffenberger.

Minor Requirements

- A. One *required* introductory course (3 hours.)
Rel 225 Anabaptist and Pietist Movements
- B. Four *elective* courses from the following list (12 hours.)
Rel 230 Religion in America
Rel 335/His 315 Renaissance and Reformation History
Rel/Soc 361 Anabaptist and Pietist Groups to 1850
Rel/Soc 362 Anabaptist and Pietist Groups since 1850
Rel/Soc 363 Pacifism Among Anabaptist and Pietist Groups
Rel/Soc 364 Amish Society
- C. One *required* capstone research seminar (3 hours.)
Rel/Soc 365 Anabaptist and Pietist Groups in Modern Society

Peace and Conflict Studies Minor

The interdisciplinary minor in Peace and Conflict Studies consists of 18 credit hours. The curricular model incorporates three types of courses: required introductory courses (6 hours.); elective courses in a variety of disciplines (9 hours.); and a capstone, integrative seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

In order to provide students with adequate conceptual tools and conciliation skills, the program of study is multidisciplinary in both method and instruction. The *introductory courses* orient students to basic concepts and approaches in Peace and Conflict Studies as well as the history of nonviolence. The *elective courses*, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which taps the analytic resources of various academic fields. The *capstone course elective* requires students to synthesize concepts and knowledge from several disciplines in order to address a research problem of practical or theoretical interest. At least two faculty members, representing different academic fields, will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. Program advisor: Dr. William V. Puffenberger.

Minor Requirements

- A. Two *required* introductory courses (6 hours.)
- | | |
|---------|---|
| Rel 165 | Introduction to Peace and Conflict Resolution |
| Hi 221 | History of Nonviolence |
- B. Three *elective* courses from the list below, or other approved courses (9 hours). No more than two elective courses shall be chosen from any one department. At least two of the elective courses must be taken outside the student's major department.
- | | |
|-------------|--|
| Com 301 | Interpersonal Communication |
| PS 245 | International Relations |
| PS 345 | American Foreign Policy |
| Psy 235 | Social Psychology |
| Rel 310 | Biblical Perspectives on Peace and Justice |
| Rel 351 | Religion and Violence |
| Rel 357 | The Church's Role in Social Change |
| Soc 358 | Sociology of War and Peace |
| Soc/Rel 363 | Pacifism Among Anabaptist and Pietist Groups |

- C. A required *capstone* seminar designed to integrate previous work and culminate in a major research paper.
Rel 465 Directed Research Project

International Studies Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign culture, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are making themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The Business Department has an international business concentration designed specifically for business majors. Details of this option can be obtained from the Business Department. The structure of the minor for all other majors consists of:

1. *Foreign language competency*: 6 semester hours in oral and written expression beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level I + on the ACTFL/ETS scale.
2. *Three required foundation courses* (9 hours):

An 111	Understanding Human Cultures
Ec 307	International Economics* or
Ec 311	Economic Development or
Ec 312	International Political Economy
	(only one economics course may be selected)
PS245	International Relations
3. *Four elective courses* (12 hours) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 251	Cross Cultural Understanding
BA 317	International Marketing
BA 371	International Management
BA 469	International Comparative Management

Com 372	International Communications
Ec 307	International Economics*
Ec 308	Comparative Economic Systems*
Ec 371	Economic Development*
Ec 372	International Political Economy
Fr/Ge/Sp 311	Making of Modern Society
Fr/Ge/Sp 312A & 312B	Languages for the Professions
Hi 205	Modern Far East
Hi 216	Modern Britain
Hi 218	Europe in the Twentieth Century
Hi 220	History of the Soviet Union
Hi 227	History of Africa
Hi 323	History of China
Hi 324	History of Japan
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
PS 345	American Foreign Policy
PS 351	Comparative Governments
PS 352	Latin American Politics
PS 353	Politics of Developing Nations
PS 444	United States Security Policy
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The Director of International Studies (Professor Wayne Selcher) will help the student with course selections. With the exception of courses specifically required for the major (e.g., Political Science 245 for Political Science majors), courses in the minor must be selected from core courses or free electives. Completion of the minor is indicated on a student's transcript.

Pre-Law Program

Chairman of the Pre-law Committee: H. Herbert Poole (*History*).

Members of the Committee: Paul Gottfried (*Political Science*), George A. Gliptis (*Business*), Louis F. Martin (*English*), Anthony M. Matteo (*Philosophy*), E. Fletcher McClellan (*Political Science*), W. Wesley McDonald (*Political Science*), Richard L. Mumford (*History*).

Because the training of a pre-law student may be accomplished in almost any academic discipline, such as En-

glish, History, Political Science, Philosophy, or Business, a committee has been established to assist the pre-law student during his undergraduate years.

The Pre-Law Committee works with the pre-law student and the student's major advisor to ensure that a reasonable and sound course of study is followed that is acceptable for entry into a school of law. The committee aids the student in selecting a suitable school, and advises the applicant on the registration and the preparation for the Law School Admissions Test (LSAT). The committee guides the preparation and submission of applications and supervises the requests for letters of recommendation for worthy candidates.

In order to create the most effective curriculum, the pre-law student should introduce himself to the Pre-Law Committee early in the freshman year to discuss future course scheduling and long-term plans.

The Pre-Law Committee also supervises the activities of the Law Club and works closely with the campus Forensic Team; both activities are highly recommended for pre-law students.

Over the years, the members of the committee have maintained a liaison with the schools of law which are most frequently attended by Elizabethtown College graduates. These include: American University, Antioch College, University of Baltimore, Boston University, University of Bridgeport, Case Western Reserve University, University of Dayton, University of Delaware, Dickinson College, Duke University, Duquesne University, Fordham University, Georgetown University, George Washington University, Hofstra, University of Miami, University of Nebraska, New York Law School, New York University, Ohio Northern University, Oklahoma, Pace, Pepperdine, Pittsburgh, Rutgers, Saint Mary's University of San Antonio, Syracuse, Temple, University of Toledo, Valparaiso, Vermont Law School, Villanova, Washington and Lee, and William and Mary.

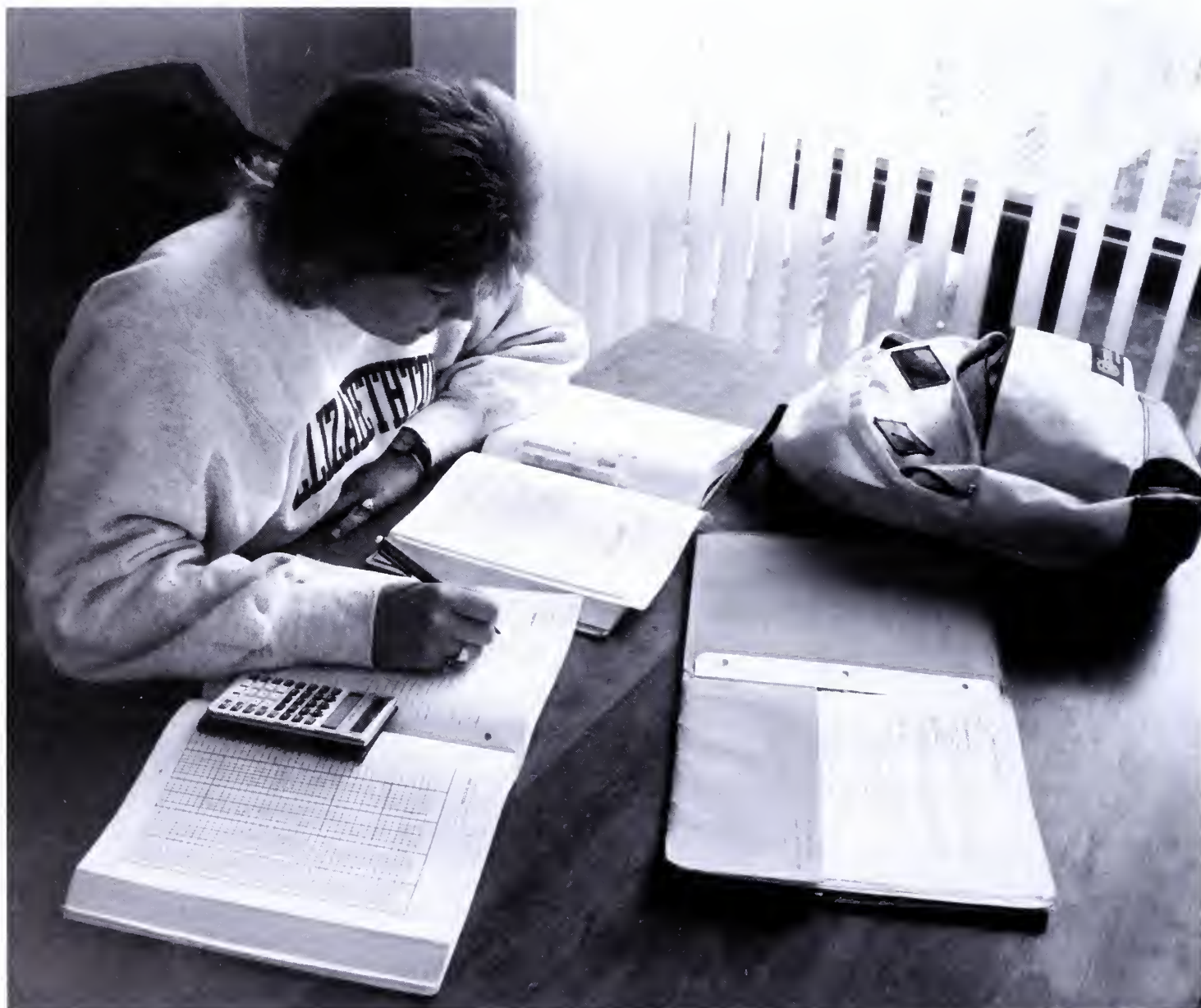
Public Administration Minor

The public administration minor provides knowledge, skills, and experience to students desiring a career in public service. Combined with an appropriate academic major, the minor prepares students for careers in public management, public policy analysis and administration, legislative affairs, urban and regional planning, international development administration, and related fields. In particular, the minor is designed to provide a necessary background for students who intend to pursue graduate study in public affairs.

The requirements of the minor reflect the interdisciplinary nature of governmental activity. The courses introduce the student to: (1) the political, economic, and organizational environment of the public administrator; and (2) the major activities, responsibilities, and roles of

public administrators. An important component of the minor is participation in the Capital Semester Internship Program (Political Science 471), which furnishes internship opportunities with state and local government agencies.

The minor is available to all students except political science majors, who may elect a concentration in public administration within the major. The required courses in the minor are: Economics 101; Political Science 111 or 351, 361, and 471; Business Administration 376; and Sociology 360. Students interested in working for federal, state, or local governments in the United States should take Political Science 111, while students who want to pursue public-sector work outside the U.S. should take Political Science 351. With the exception of Economics 101, courses in the minor may not count toward a student's academic major. For additional information and assistance, contact Dr. E. Fletcher McClellan of the Political Science Department.



Serious study in a corner of the High Library.

Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Richard R. Crocker, *Dean of College Life and Associate Professor of Religious Studies* (1990)
B.A., M.A., Brown University; M.Div., Ph.D., Vanderbilt University (1990)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; LL.D., Elizabethtown College (1952-1984)

Louise B. Black, *Associate Professor of English Emerita*
B.S., Elizabethtown College; M.S., Temple University (1968-1988)

I.L. Bossler, *Professor of Mathematics Emeritus*
B.S., Ursinus College; M.S., Purdue University (1959-1989)

Stanley Bowers, *Associate Professor of Education Emeritus*
B.S., Millersville State College; M.Ed., Temple University (1965-1990)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Robert D. Dolan, *Associate Professor of Mathematics Emeritus*
B.S., California State College; M.A., West Virginia University (1964-1992)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1945-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Université, University of Paris (1966-1973)

Robert B. Garrett, *Assistant Professor of Health and Physical Education Emeritus*
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967-1988)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

Henry M. Libhart, *Professor of Art Emeritus*
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967-91)

J. Henry Long, *Associate Professor of Sociology Emeritus*
B.S., Elizabethtown College; B.D., D.D., Bethany Theological Seminary (1969-1988)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Rollin E. Pepper, *Professor of Biology Emeritus*
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964-1990)

Elisabeth D. Shaw Russell, *Associate Professor of English Emerita*
B.A., M.A., Oxford University (1969-1988)

Carl N. Shull, *Professor of Music Emeritus*
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961-1988)

Harry L. Simmers, *Associate Professor of Music Emeritus*
B.S., Bridgewater College; M.M., American Conservatory of Music (1966-1990)

Donald P. Smith, *Assistant Professor of Physical Education Emeritus*
B.S., University of Mississippi (1954-64, 1972-88)

Royal E. Snively, *Counselor Emeritus*
M.A., Ohio State University (1965-1990)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Robert S. Young, *Director of Special Gifts Emeritus*
(1950-1984)

Robert E. Ziegler, *Professor of Science Education Emeritus*
B.A., Bridgewater College; M.R.E., Bethany Seminary; M.S., Ph.D., University of Wisconsin (1966-1988)

The remaining faculty member listings indicate two dates. The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)

Paul M. Dennis, *Professor of Psychology* (1992)
B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)

James L. Dively, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)

Donald F. Durnbaugh, *Carl W. Zeigler Professor of Religion and History* (1989)
B.A., Manchester College; M.A., University of Michigan; Ph.D., University of Pennsylvania (1989)

J. Thomas Dwyer, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)

Delbert W. Ellsworth, *Professor of Psychology* (1988)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)

Paul Gottfried, *Professor of Humanities* (1989)
A.B., Yeshiva University; M.A., Ph.D., Yale University (1989)

John F. Harrison, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)

J. Robert Heckman, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)

Jack L. Hedrick, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963)

Frederic E. Hoffman, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)

Otis D. Kitchen, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)

Donald E. Koontz, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)

Donald B. Kraybill, *Professor of Sociology* (1984) and *Director of the Galen and Jessie B. Young Center for the Study of Anabaptist and Pietist Groups*.
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)
Sabbatical leave, Fall 1992

Carroll L. Kreider, *Professor of Business* (1989)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)

J. Kenneth Kreider, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964)

Robert C. Moore, *Professor of Communications* (1989)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983).

Richard L. Mumford, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)

Zoe G. Proctor, *Professor of Chemistry and Director of Medical Technology Program* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)

William V. Puffenberger, *Professor of Religion* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967).

John P. Ranck, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)

D. Paul Rice, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)

Carmine T. Sarracino, *Professor of English* (1991)
B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973)

Charles D. Schaeffer, Jr., *A.C. Baugher Professor of Chemistry* (1991)
B.A., Franklin and Marshall College; Ph.D., State University of New York at Albany (1976)

Wayne A. Selcher, *Professor of International Studies and Director of the International Studies Program* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969)

Ronald L. Shubert, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)

Martin O. L. Spangler, *Professor of Chemistry* (1968)
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966)

Stanley T. Sutphin, *Professor of Philosophy* (1970)
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963)

Bela Vassady, Jr., *Horace E. Raffensperger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)
Sabbatical leave, Spring 1993

Thomas R. Winpenny, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)

Associate Professors

Jill Sunday Bartoli, *Associate Professor of Education* (1990)
B.A., M.A., University of Kentucky; M.Ed., Shippensburg State College; Ph.D., University of Pennsylvania (1990)

Cynthia Beyerlein, *Associate Professor of Public Administration* (1992)
B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)

Paula R. Boothby, *Associate Professor of Education* (1990)
A.B., Kalamazoo College; M.A., Western Michigan University; Ed.D., University of North Dakota (1990)

Uldis Daiga, *Associate Professor of Modern Languages* (1973)
B.S., University of North Carolina; M.A., Temple University (1965)

Darrell R. Douglas, *Associate Professor of Music* (1972)
B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972)

Leonard A. Eiserer, *Associate Professor of Psychology* (1986)
B.A., University of Maine; M.A., Ph.D., Bryn Mawr College (1981)

Martha A. Eppley, *Associate Professor of Economics* (1971); *Associate Dean of the Faculty and Registrar* (1979)
B.S., Elizabethtown College; M.B.A., Indiana University (1964)

Hugh G. Evans, Jr., *Associate Professor of Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania State University (1968)

Boyd Fox, *Associate Professor of Education* (1973)
B.S., M.S., Ed.D., Utah State University (1970)

E. Margaret Gabel, *Assistant to the Director of the Library and Head Cataloguer*
B.S., Kutztown State Teachers College; M.S.L.S., Syracuse University

George A. Gliptis, *Associate Professor of Business* (1972)
B.S., J.D., University of Virginia (1970)

Suzanne Schmidt Goodling, *Associate Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury College (1964)

Maurice R. Hoppie, *Associate Professor of Economics* (1987)
B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)

Jacqueline L. Jones, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign, OTR/L (1987)

Yvonne E. Kauffman, *Associate Professor of Physical Education* (1990)
B.S., Bridgewater College; M.Ed., West Chester State College (1966)

John E. Koontz, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)

Ronald L. Laughlin, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)

Thomas R. Leap, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)

R. Bruce Lehr, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)

Anthony M. Matteo, *Associate Professor of Philosophy* (1991)
B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

E. Fletcher McClellan, *Associate Professor of Political Science* (1989)
B.A., Franklin and Marshall College; M.A., East Tennessee State University; Ph.D., The University of Tennessee (1982)

W. Wesley McDonald, *Associate Professor of Political Science* (1986)
B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)

Jennifer Meoli, *Associate Professor of Business* (1991)
B.S., State University of New York at Cortland; M.S., Ph.D., Purdue University (1991)

Robert K. Morse, *Associate Professor of Mathematics* (1971)
B.S., Franklin and Marshall College; M.A., Temple University (1968)

Stanley R. Neyer, *Associate Professor of Business* (1972)
B.S., Elizabethtown College; M.B.A., Shippensburg State College; C.P.A. (1964)

D. Kenneth Ober, *Associate Professor of Physical Education and Director of Athletics* (1972)
B.S., M.S., West Chester State College (1964)

Paul Petersen, *Associate Professor of Occupational Therapy* (1988)
B.S., Syracuse University; M.A., New York University; Ph.D., University of Nebraska at Lincoln, OTR/L (1984)

Frank P. Polanowski, *Associate Professor of Biology* (1981)
B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)

H. Marshall Pomroy, *Associate Professor of Business* (1971)
B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)

H. Herbert Poole, Jr., *Associate Professor of History* (1982)
B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969)

Raymond R. Reeder, *Associate Professor of Chemistry* (1973)
B.S., Case Institute of Technology; Ph.D., Brown University (1969)

John C. Rohrkemper, *Ralph W. Schlosser Associate Professor of English* (1987)
B.A., M.A., Ph.D., Michigan State University (1981)

Donald E. Smith, *Associate Professor of Communications* (1973)
B.S., M.S., State University of New York College at Geneseo (1969)

John W. Stites, *Associate Professor of Music* (1976)
B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, *Associate Professor of Business* (1987)
B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut; Ph.D., Temple University (1987)

John A. Teske, *Associate Professor of Psychology* (1990)
B.A., Indiana University; M.A., Ph.D., Clark University (1986)

Glenn H. Thompson, Jr., *Associate Professor of Earth Science* (1973)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)

Randolph L. Trostle, *Associate Professor of Business* (1984)
B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)

Barbara C. Tulley, *Associate Professor of Computer Science* (1989)
B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)

Hans-Erik Wennberg, *Associate Professor of Communications* (1992)
B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Assistant Professors

Kurt M. Barnada, *Assistant Professor of Modern Languages* (1988)
B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University (1988)

David A. Bauman, *Assistant Professor of Education* (1988)
B.A., Goshen College; M.Ed., Millersville University (1988)

Vivian R. Bergel, *Assistant Professor of Social Work* (1987)
B.A., M.S.W., West Virginia University; Ph.D., University of Maryland at Baltimore (1987)

Morteza Bina, *Assistant Professor of Computer Science* (1990)
B.S., Arya Mehr University of Technology; D.E.A., Institut National Polytechnique de Grenoble; M.S., Bowling Green State University; Ph.D., Université de Technologie de Compiègne (1990)

Terry Blue, *Assistant Professor of Education* (1990)
B.A., Juniata College; M.A., Temple University; Ph.D., Pennsylvania State University (1990)

Christina A. Bucher, *Assistant Professor of Religion* (1988)
A.B., Elizabethtown College; M.A.Th., Bethany Theological Seminary, Ph.D., Claremont Graduate School (1988)

Carolyn F. Dillon, *Assistant Professor of Psychology, part-time* (1992)
B.A., M.A., Ph.D., University of Delaware (1992)

J. Sue Dolan, *Assistant Professor of Business* (1980)
B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

Neil A. Dominas, *Assistant Professor of Communications* (1990)
B.A., University of Rochester; Ph.D., University of Wisconsin-Madison (1990)

Linda E. Dorsten, *Assistant Professor of Sociology* (1990)
B.A., Otterbein College; M.A., Ph.D., Ohio State University (1990)

Sharon K. Farley, *Assistant Professor of Occupational Therapy* (1991)
B.S., Elizabethtown College; M.S., Towson State University; OTR/L (1987)

David Ferruzza, *Assistant Professor of Physics and Engineering and Director of the Engineering Programs* (1990)
B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology (1984)

Maria H. Frawley, *Assistant Professor of English* (1992)
B.A., Bucknell University; M.A., Ph.D., University of Delaware (1992)

Milton Friedly, *Assistant Professor of Art* (1990)
A.A., Northwest Community College; B.F.A., Arizona State University; M.F.A., University of Wyoming (1987)

Craig Hergert, *Assistant Professor of English* (1990)
B.A., Concordia College; M.A., University of Missouri-Columbia; Ph.D., Bowling Green State University (1990)

Patricia A. Hill, *Assistant Professor of Business* (1988)

B.A., Gettysburg College; M.B.A., University of Baltimore (1988)

Jack Kasar, *Assistant Professor of Occupational Therapy and Clinical Education Coordinator* (1989)

B.A., West Chester University; M.S., Virginia Commonwealth University; Ph.D., University of Pennsylvania, OTR/L (1988)

Link Martin, Jr., *Assistant Professor of Social Work and Director of Field Instruction* (1988)

B.S., Murray State University; M.S.W., University of Hawaii (1988)

Louis F. Martin, *Assistant Professor of English* (1988)

B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)

Paul V. McCormick, *Assistant Professor of Biology* (1991)

B.S., M.S., Virginia Polytechnic Institute and State University; Ph.D., University of Louisville (1991)

Margaret McFarland, *Assistant Professor of Social Work, part-time* (1990)

B.S.W., Lock Haven University; M.S.W., Marywood School of Social Work; Ph.D., University of Maryland at Baltimore (1990)

Dana Gulling Mead, *Assistant Professor of English* (1989)

B.A., M.A., University of Tennessee, Knoxville; Ph.D., Texas Christian University (1989)

Donald G. Muston, *Assistant Professor of Business* (1977)

B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Jane E. Palmquist, *Assistant Professor of Music* (1990)

B.M.E., Northern State College; M.M., Ph.D., University of Texas at Austin (1990)

Lawrence W. Polin, *Assistant Professor of Mathematics* (1989)

B.S., St. John's University; Ph.D., State University of New York at Stony Brook (1989)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)

B.A., Gettysburg College; M.S., Ph.D., Vanderbilt University (1988)

Michael J. Rohrbacher, *Assistant Professor of Music Therapy* (1989)

B.M., East Carolina University; M.S., Johns Hopkins University (1989)

Gabriela R. Sanchis, *Assistant Professor of Mathematics* (1991)

B.S., Syracuse University; M.A., Ph.D., University of Rochester (1991)

Michael Severeid, *Assistant Professor of Theatre* (1990)

A.B., Middlebury College; M.A., Central Missouri State University (1990)

James G. Shaner, *Assistant Professor of Communications* (1992)

B.A., Marquette University; M.A., Ph.D., University of Missouri-Columbia (1992)

William M. Stuckey, *Assistant Professor of Physics* (1988)

B.S., Wright State University; M.S., Ph.D., University of Cincinnati (1988)

Sharon R. Trachte, *Assistant Professor of Modern Languages* (1986)

B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)

Juan A. Toro, *Assistant Professor of Education* (1992)

B.S., Catholic University of Puerto Rico; M.S., Western Illinois University; Ph.D., Pennsylvania State University (1992)

Robert P. Wheelersburg, *Assistant Professor of Anthropology, Assistant Dean of the Faculty* (1989)

B.A., Ohio State; A.M., Ph.D., Brown University (1989)

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)

B.A., Bridgewater College (1968)

Instructors

Leota E. Dye, *Instructor in Communications* (1992)

A.A., Hutchinson Community College; B.S., M.A., Kansas State University (1992)

James W. Hunter, Jr., *Instructor in Theatre and Technical Director of Theatre* (1991)

B.A., University of North Carolina-Asheville; M.F.A., University of Virginia (1991)

Lou Ellen Schellenberg, *Instructor in Art* (1992)

B.A., Framington State College; Diploma, School of Museum of Fine Arts, Boston; M.F.A., State University of New York at Albany (1992)

Lecturers

Richard L. Evans, *Lecturer in Computer Science and Coordinator for Academic Computing* (1990)

B.S., University of Louisville; M.S., Naval Post-graduate School (1990)

Candace H. O'Donnell, *Part-time Lecturer in English and Education and Supervisor of Secondary Education*

B.A., Washington University; M.A., Millersville State College

Debra D. Ronning, *Lecturer in Music and Director of the Preparatory Division*

B.S., M.A., Indiana University of Pennsylvania

Adjunct Faculty On-Campus

Sherry Albert, *Department of Occupational Therapy*

Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Joseph Anderson, *Department of Occupational Therapy*

B.S., M.Ed., M.B.A., Pennsylvania State University

Cecil A. Archbold, *Department of Business*

M.S., Roosevelt University

David D. Bailey, *Department of Business*

M.Adm., Pennsylvania State University, Capitol Campus

Virginia B. Bates, *Department of Modern Languages*

B.A., Southern Illinois University; M.A., University of California at Los Angeles

James R. Brimmer, *Department of Business*

B.A., Millersville University; C.P.M., University of Wisconsin

Ann S. Dinsmore, *Department of Fine and Performing Arts*

B.S., Elizabethtown College

C. William Eckenrode, *Department of Business*

M.A., St. Francis College

Russell Eisenbise, *EXCEL Program*

M.A., Temple University

William J. Fulton, *Department of Business*

J.D., University of Pittsburgh

Laszlo Geder, *Department of Occupational Therapy*

M.D., Ph.D., University of Debrecen, Hungary

Richard H. Gifford, Jr., *Department of Business*

M.B.A., Gettysburg College

Jane R. Gockley, *Department of Physical Education*

M.S., Millersville University

Rebecca Griffin-Harvey, *Department of English*

M.A., Pennsylvania State University

Donald Gross, *Department of Business*
M.B.A., Boston University

Luke K. Grubb, *Department of Fine and Performing Arts*
B.S., Lebanon Valley College; M.M., Indiana University

John A. Guerrisi, *Department of Business*
M.Ad., Pennsylvania State University, Capitol Campus

Doris J. Hall-Gulati, *Department of Fine and Performing Arts*
B.M., Peabody Conservatory of The Johns Hopkins University; M.M., University of Michigan

Robert B. Harnish, *Department of Religious Studies*
M.Div., Lutheran Theological Seminary at Gettysburg

Peggy S. Herr, *Department of Modern Languages*
B.A., University of the Pacific; M.A., Brigham Young University

Cynthia Hess, *Department of English*
B.S., Millersville State College; M.A., Millersville University

Dorothy A. Humpf, *Department of Sociology and Anthropology*
Ph.D., Pennsylvania State University

Richard A. Joyce, *Department of History*
M.A., San Francisco State University

Paul A. Kadjo, *Department of Business*
Ph.D., State University of New York

Richard L. Keesey, *Department of Business*
M.Ad., Pennsylvania State University

Linda Kirkpatrick, *Department of Fine and Performing Arts*
M.M., North Texas State University

Joseph Kujovsky, *Department of Business*
M.B.A., Auburn University

Larry M. Lake, *Department of English*
Ph.D., University of Pennsylvania

David E. Leithmann, *Department of Fine and Performing Arts*
B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University

Mark A. McConaughy, *Department of Sociology and Anthropology*
Ph.D., University of Pittsburgh

Lawrence J. McNeil, *Department of Religious Studies*
M.Div., St. Lawrence Seminary

Alison J. Mekeel, *Department of Fine and Performing Arts*
B.M., Oberlin Conservatory; M.M., New England Conservatory of Music

Paul T. Mertel, Jr., *Department of Political Science*
M.H.C.Ad., Baylor University

James A. Miller, *Department of Business*
J.D., University of Baltimore

Anna Surls Moore, *Department of Social Work*
B.A. Roosevelt University; M.S.W. University of Illinois

Grant Moore, *Department of Fine and Performing Arts*
B.A., Indiana University of Pennsylvania

Warren Munick, *Department of Business*
M.B.A., Miami University of Ohio

Paul M. Munyofu, *Department of Mathematical Sciences*
Ed.D., University of Pittsburgh

Steven J. Musser, *Department of Business*
Ph.D., Temple University

Bruce G. Nilson, *Department of Business*
M.S., Pennsylvania State University

Gretchen N. Patti, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

M. Benson Paull, *Department of Philosophy*
M.Th., Princeton Theological Seminary

Sue A. Redmond, *Department of Business*
B.S., Shippensburg State College

Janet Rowand, *Department of Occupational Therapy*
B.S., Elizabethtown College; OTR

Michael A. Scanlin, *Department of Physics*
B.A., Franklin and Marshall College; M.S., Pennsylvania State University

Carl E. Schroeder, *Department of Fine and Performing Arts*
B.M., M.M., Peabody Conservatory of Music

Laurie A. Showers, *Department of Mathematical Science*
B.S., Elizabethtown College

Arthur E. Simpson, Jr., *Department of Business*
M.B.A., Pennsylvania State University, Capitol Campus

William M. Sloane, *Department of Communications*
B.A., York College of Pennsylvania; J.D., Delaware Law School of Widener University; L.L.M., Temple University; S.J.D., Thomas Jefferson College of Law of Heed University

Janice Stouffer, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Richard J. Tushup, *Department of Psychology*
Ph.D., University of Delaware

JoAnne Weaver, *Department of Business*
B.S., Mr. Saint Mary's College; C.P.A.

Carol S. Weavill, *Department of Computer Science*
B.S., Elizabethtown College

Judy Williams-Henry, *Department of Fine and Performing Arts*
B.F.A., Boston Conservatory of Music; M.S. Wheelock College

John Zurfluh, *Department of Fine and Performing Arts*
B.M., Eastman School of Music; M.M., D.M.A., Catholic University of America

Off-Campus Medical Technology

Margaret Black, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S., Lebanon Valley College; M.T. (ASCP)

Sharon Deitrich, *Reading Hospital and Medical Center*, West Reading, Pa.
B.S., Kutztown University

John W. Eiman, *Abington Memorial Hospital*, Abington, Pa.
M.D., University of Pennsylvania School of Medicine

Edward Eisenhower, *St. Joseph Hospital*, Lancaster, Pa.
M.D., Medical University of South Carolina

Gerald Fahs, *Lancaster General Hospital*, Lancaster, Pa.
M.D., Temple University School of Medicine

Janice Fogleman, *Harrisburg Hospital*, Harrisburg, Pa.
M.Ed., Pennsylvania State University; M.T. (ASCP)

Nadine Gladfelter, *Lancaster General Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Susan Herr, *St. Joseph Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Brenda Kile, *York Hospital*, York, Pa.
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, *Harrisburg Hospital*, Harrisburg, Pa.
M.D., Airlangga University School of Medicine

John A. Mihok, *Monmouth Medical Center*, Long Branch, N. J.
B.S., University of Maryland; Catholic University of America; S.M. (ASCP)

Julian W. Potok, *Polyclinic Medical Center*,
Harrisburg, Pa.
D.O., Philadelphia College of Osteopathic
Medicine

Lynn Russell, *Polyclinic Medical Center*,
Harrisburg, Pa.
B.S. Springfield College; B.S. Towson State
College; M.A., Central Michigan
University; M.T. (ASCP)

Barbara Scheelje, *Abington Memorial
Hospital*, Abington, Pa.
B.S., Colby-Sawyer College; M.T. (ASCP)

I. Donald Stuard, *Reading Hospital and
Medical Center*, West Reading, Pa.
M.D., University of Rochester School of
Medicine

John P. Whiteley, *York Hospital*, York, Pa.
M.D., Temple University School of Medicine

Louis Zinterhofer, *Monmouth Medical Center*,
Long Branch, N. J.
M.D., Tulane Medical School

Psychology

Ralph Norgran, Department of Psychology,
Hershey Medical Center, Hershey, Pa.
A.B., University of Pennsylvania, A.M., Ph.D.
University of Michigan

Social Work

Margie Adelman, *First Step*, Harrisburg, Pa.
M.S.W., University of Pittsburgh

Carl Back, *Cities In Schools of Dauphin
County*, Harrisburg, Pa.
M.Ed., Villanova University

David H. Bender, *Lancaster County Council
on Alcoholism and Drug Abuse*, Lancaster,
Pa.
B.A., Boston College

Constance V. Bieling, *Gnaden Huetten
Memorial Hospital*, Lehigh, Pa.
M.S.W., Marywood College

Molly Casey-Mock, *Hershey Medical Center*,
Hershey, Pa.
M.S.W., Maryland College

Patricia DeMooy, *Delaware County Juvenile
Probation Services*, Media, Pa.
M.S.W., University of Pennsylvania

Kay Eisenhour, *Catholic Charities Adoption
Department*, Harrisburg, Pa.
M.S.W., University of Maryland

Lynn G. Everhart, *Children's Playroom*,
Harrisburg, Pa.
M.S., University of Texas

James Fuddy, *Hershey Medical Center*,
Hershey, Pa.
M.S.W., University of Pennsylvania

Laura Handford, *Capitol Area Intermediate
Unit #15*, Camp Hill, Pa.
M.S.W.

Kevin Jacoby, *Hershey Medical Center*,
Hershey, Pa.
M.S.W., University of Maryland

John R. Lamb, *Cenacle Shelter*, Harrisburg,
Pa.
M.S.W., University of Pennsylvania

Janice Lehr, Pennsylvania Chapter, *National
Association of Social Workers*, Harrisburg,
Pa.
M.S.W., West Virginia University

Pamela McDermott, *Hershey Medical Center*,
Hershey, Pa.
M.S.W., University of Michigan

Jill McVey, *Lancaster County Children Youth
Social Services*, Lancaster, Pa.
M.S.W., Temple University

Fiona Patterson, *Polyclinic Medical Center*,
Harrisburg, Pa.
M.S.W., University of Pennsylvania

Gerald J. Ressler, *FOCUS Partial Hospital
Program Philhaven Hospital*, Mt. Gretna,
Pa.
M.S.W., Marywood College

Gary Shuey, *Cumberland County Children and
Youth*, Carlisle, Pa.
M.S.W., Marywood College

Jo Sterner, *YWCA Rape Crisis/Domestic
Violence Services*, Harrisburg, Pa.
B.S., Boston University

Leann Weaver, *Masonic Homes*, Elizabeth-
town, Pa.
M.S.W., Marywood College

Martin Yespe, *Crisis Intervention*, Harrisburg,
Pa.
M.S.W., University of Maryland

Clinical Education Centers Occupational Therapy

Abington Memorial Hospital, Abington, Pa.

Adult Day Care, Hellam, Pa.

Allegheny General Hospital, Pittsburgh, Pa.

All Saints Hospital, Wyndmoor, Pa.

Allentown State Hospital, Allentown, Pa.

Allied Services for the Handicapped,
Scranton, Pa.

Altoona Hospital, Altoona, Pa.

Ancora Psychiatric Hospital, Hammonton, N.J.

Betty Bacharach Rehabilitation Center,
Pomona, N.J.

Baltimore City Hospital, Baltimore, Md.

Bergen Pines County Hospital, Paramus, N.J.

Binghamton Psychiatric Center,
Binghamton, N.Y.

Bryn Mawr Rehabilitation Hospital,
Malvern, Pa.

Carlisle Hospital, Carlisle, Pa. Chambersburg
Hospital, Chambersburg, Pa.

Charter Fairmount Institute, Philadelphia, Pa.

Chestnut Hill Rehabilitation Hospital,
Wyndmoor, Pa.

Children's Hospital of Pittsburgh,
Pittsburgh, Pa.

Clifton T. Perkin's Hospital Center, Jessup, Md.

Coatesville VA Medical Center, Coatesville, Pa.

Colonial Manor, York, Pa.

Community Hospital of Lancaster,
Lancaster, Pa.

Community Rehabilitation Specialists, Erie, Pa.

Crozier-Chester Medical Center, Chester, Pa.

Danbury Hospital, Danbury, Conn.

Danville State Hospital, Danville, Pa.

Deer's Head Hospital Center, Salisbury, Md.

D. T. Watson Rehabilitation Hospital,
Sewickley, Pa.

Eagleville Hospital and Rehabilitation Center,
Eagleville, Pa.

Eastern Pennsylvania Psychiatric Institute,
Philadelphia, Pa.

Eastern State Hospital, Williamsburg, Pa.

Easton Hospital, Easton, Pa.

Elizabethtown Hospital and Rehabilitation
Center of the Pennsylvania State
University, Elizabethtown, Pa.

Ephrata Community Hospital, Ephrata, Pa.

Eugenia Hospital, Lafayette Hills, Pa.

Fallston General Hospital, Fallston, Md.

Fort Howard VA Medical Center,
Fort Howard, Md.

Francis Scott Key Medical Center,
Baltimore, Md.

Freehold Area Hospital, Freehold, N.J.

Garden State Rehabilitation Center, Toms
River, N.J.

Geisinger-Wyoming Valley Medical Center,
Wilkes-Barre, Pa.

Georgetown University Hospital,
Washington, D.C.

Good Samaritan Hospital, Baltimore, Md.

Good Samaritan Hospital, Lebanon, Pa.

Good Shepherd Home & Rehabilitation
Hospital, Allentown, Pa.

Great Lakes Rehabilitation Hospital, Erie, Pa.

Hannemann University Hospital,
Philadelphia, Pa.

Harrisburg Institute of Psychiatry,
Harrisburg, Pa.

Harrisburg Hospital Community Mental Health
Center, Harrisburg, Pa.

Harrisburg Polyclinic Medical Center,
Harrisburg, Pa.

Harrisburg State Hospital, Harrisburg, Pa.

Harmarville Rehabilitation Center,
Pittsburgh, Pa.

Haverford State Hospital, Haverford, Pa.

Heatherbank Rehabilitation Center,
Columbia, Pa.

Hershey Medical Center, Hershey, Pa.

Highland Health Facility, Baltimore, Md.
Hillside Hospital, Glen Oaks, N.Y.

Holy Spirit Hospital & Mental Health Center,
Camp Hill, Pa.

Homestead Nursing and Rehabilitation Center,
Willow Grove, Pa.

Hospital of the University of Pennsylvania,
Philadelphia, Pa.

Howard County General Hospital,
Columbia, Md.

Institute of Pennsylvania Hospital,
Philadelphia, Pa.

Institute of Psychiatry & Human Behavior
University of Maryland, Baltimore, Md.

Institute of Living, Hartford, Conn.

Jefferson Hospital, Pittsburgh, Pa.

John Heinz Institute, Wilkes-Barre, Pa.

Johns Hopkins Hospital of Baltimore,
Baltimore, Md.

Kessler Institute for Rehabilitation, West
Orange, N.J.

Lancaster General Hospital, Lancaster, Pa.

Leading Nursing and Rehabilitation Center,
Harrisburg, Pa.

Lebanon VA Medical Center, Lebanon, Pa.

Louden Memorial Hospital, Leesburg, Va.

McLean Hospital, Belmont, Mass.

Magee Rehabilitation Hospital, Philadelphia,
Pa.

Marlboro State Hospital, Marlboro, N.J.

Maryland General Hospital, Baltimore, Md.

Maryland Rehabilitation Hospital,
Baltimore, Md.

Medcenter One, Bismark, N.Dak.

Medical Center of Delaware, Wilmington, Del.

Medical Center at Princeton, Princeton, N.J.

Mercy Hospital, Pittsburgh, Pa.

Montebello Hospital, Baltimore, Md.

Montevista Center, Las Vegas, Nev.

Montgomery General Hospital, Olney, Pa.

Moss Rehabilitation Hospital, Philadelphia, Pa.

Muhlenberg Medical Center, Plainfield, N.J.

New York University – Cornell Medical Center,
White Plains, N.Y.

Norristown State Hospital, Norristown, Pa.

North Virginia Mental Health Institute, –
Falls Church, Va.

Options, Lancaster, Pa.

Our Lady of Lourdes Hospital, Camden, N.J.

Philadelphia Psychiatric Center,
Philadelphia, Pa.

Philadelphia VA Medical Center,
Philadelphia, Pa.

Philhaven Hospital, Lebanon, Pa.

Pottstown Memorial Hospital, Pottstown, Pa.

Presbyterian University Hospital,
Pittsburgh, Pa.

Reading Hospital & Medical Center,
West Reading, Pa.

Reading Hospital Day Treatment Center,
West Reading, Pa.

Reading Rehabilitation Hospital, Reading, Pa.

Rehabilitation Hospital for Special Services,
Mechanicsburg, Pa.

Rehabilitation Hospital for Special Services,
York, Pa.

Rehabilitation Hospital for Special Services of
Nittany Valley, Bellefonte, Pa.

Rehabilitation Hospital of Altoona, Altoona, Pa.

Rehabilitation Institute of West Florida,
Pensacola, Fla.

Robert Wood Johnson Institute, Edison, N.J.

Rockland Psychiatric Center, Orangeburg, N.Y.

Rolling Hills Hospital, Elkins Park, Pa.

Sacred Heart Hospital, Norristown, Pa.

St. Agnes Hospital, Baltimore, Md.

Saint Francis General Hospital, Pittsburgh, Pa.

Saint John's Hospital, Pittsburgh, Pa.

Saint Joseph Hospital, Lancaster, Pa.

Saint Joseph Hospital, Reading, Pa.

St. Joseph's Hospital & Rehabilitation Center,
Tacoma, Wash.

Saint Lawrence Rehabilitation Center,
Lawrenceville, N.J.

Saint Joseph's Medical Center, Yonkers, N.Y.

Saint Luke's Hospital, Bethlehem, Pa.

Saint Margaret Memorial Hospital,
Pittsburgh, Pa.

St. Rita's Medical Center, Lima, Ohio

Saint Vincent Hospital and Medical Center,
New York, N.Y.

San Francisco General Hospital,
San Francisco, Calif.

Sinai Hospital, Baltimore, Md.

Southern Hills Regional Rehabilitation
Hospital, Princeton, W.Va.

Springfield Hospital Center, Sykesville, Md.

Taylor Hospital, Ridley Park, Pa.

Temple University Hospital, Philadelphia, Pa.

The Sheppard and Enoch Pratt Hospital,
Baltimore, Md.

Thomas B. Finan Center, Cumberland, Md.

Thomas Jefferson University Hospital,
Philadelphia, Pa.

Trenton Psychiatric Hospital,
West Trenton, N.J.

Truckee Meadow's Hospital, Reno, Nev.

University of Virginia Medical Center
Charlottesville, Va.

V.A. Medical Center, West Haven, Conn.

Walnut Creek Hospital, Walnut Creek, Calif.

Warren State Hospital, Warren, Pa.

Washington County Hospital Association,
Hagerstown, Md.

Welkind Rehabilitation Hospital, Chester, N.J.

Wernersville State Hospital, Wernersville, Pa.

Western State Hospital, Staunton, Va.

Williamsport Hospital, Williamsport, Pa.

Woodrow Wilson Rehabilitation Center,
Fishersville, Va.

The Administration

Office of the President

Gerhard E. Spiegel

President
Ph.D., University of Chicago

Robert L. Odean

Executive Assistant to the President and Secretary of the College
M.Div., Northern Baptist Theological Seminary

Bruce G. Holran

Director of College Relations
A.B., Colgate University

Jerry R. Britton

Director of Publications
B.S., Pennsylvania State University

Bradford W. Brubaker '88

Director of Sports Information
B.S., Elizabethtown College

Harold J. Gordon

Assistant Director of Public Relations
B.A., Temple University

Martha A. Farver-Appar

Director of Personnel

P. Joan Austin

Chaplain
Ed.D., Temple University

Academic Affairs

Frederick F. Ritsch

Provost and Dean of the Faculty
Ph.D., University of Virginia

Martha A. Eppley '62

Associate Dean of the Faculty and Registrar
M.B.A., Indiana University

Gloria F. Hess

Director of Records
M.A.R., Lancaster Theological Seminary

Robert P. Wheelersburg

Assistant Dean of the Faculty
Ph.D., Brown University

Nelson P. Bard, Jr.

Director of the Library
Ph.D., University of Virginia

E. Margaret Gabel

Assistant to the Director of the Library and Head Cataloguer
M.S.L.S., Syracuse University

Sylvia M. Tiffany

Librarian, Readers Services
M.S.L.S., North Carolina Central University

Naomi L. Hershey

Reference Librarian
M.L.S., Drexel University

Gordon McK. Bateman

Director of Financial Aid
M.S., Indiana University

Carolyn A. Wharton

Assistant Director of Financial Aid
B.S., Indiana University of Pennsylvania

Ronald D. Potier

Director of Admissions
A. B., Middlebury College

Susan E. Cupit '85

Associate Director of Admissions
B.A., Elizabethtown College

Sally Hillman Redman

Associate Director of Admissions
B.A., University of Delaware

Daniel F. Evans

Assistant Director of Admissions
B.A., University of Richmond

Udochi Amachi '92

Admissions Counselor
B.A., Elizabethtown College

Amy Hagemann

Admissions Counselor
B.S., Muhlenburg College

Lisa M. Warren

Admissions Counselor
B.A., Shippensburg University

John J. Marisic

Director of Computing
B.A., The Johns Hopkins University

Richard L. Evans

Lecturer in Computing Sciences and Coordinator for Academic Computing
M.S., Naval Postgraduate School

E. Jeffrey White

Personal Computer Coordinator
B.S., Frostburg State College

Nevin O. Garner

Associate Director of Data Processing Services

Kathryn M. Tyler

Information Center Programmer
B.S., Millersville University

Barbara R. Maroney

Director of Continuing Education
M.Ed., Temple University

David B. Dentler

Assistant Director of Continuing Education
M.A., Temple University

Steven M. Rutter

Director of Instructional Services
A.S., Electronics Institute

Robert J. Kennedy III

Assistant Director of Instructional Services
B.A., St. John Fisher College

Business Affairs

John M. Shaeffer

Treasurer
M.B.A., University of Pittsburgh

Daniel J. Benny

Director of Public Safety
M.A., Vermont College

Cynthia L. Atkinson

Assistant Director of Public Safety

Edwin L. Cable

Controller/Business Manager
B.A., Manchester College

Mary W. Hill '71

Post Office Manager
B.A., Elizabethtown College

J. Robert Hollinger '72

Chief Accountant
B.S., Elizabethtown College

Keith M. Marks

College Store Manager

Susan K. Shearer

Director of Conferences
M.A., Boston University; M.S., Simmons College

Martha A. Farver-Appar

Director of Personnel

Anne L. Moore

Assistant Director of Personnel

Larry W. Bekelja

Director of Plant Operations
B.S.Ed., Shippensburg State College

David R. Salmon

Director of Food Services
A.A.S., SUNY

College Life

Richard R. Crocker

Dean of College Life
Ph.D., Vanderbilt University

James R. Hilton, Sr. '66

Associate Dean of College Life, Student Services
M.S., Shippensburg State College

Shirley A. Deichert

Director of the Learning Center
M.S., Temple University

Ginger S. Groff

Director of Health Services
R.N., Harrisburg Polytechnic Clinic Hospital

Deborah L. Moorhead
Assistant Dean of College Life
M.A., University of Arkansas

Beverly V. Piscitelli
*Director of Personal and Career
Counseling Services*
M.S., University of Bridgeport; N.C.C.

P. Joan Austin
Chaplain and Counselor
Ed.D., Temple University

H. Andrew Sagar III
Staff Counselor
Ph.D., University of Pittsburgh

Cindy Wilhelm-Ernharth
Career Counselor
M.A., Trenton State College

D. Kenneth Ober
Director of Athletics
M.S., West Chester State College

Pamela A. Drazkowski
*Head Volleyball Coach and Staff
Member in the Department of
Physical Education*
M.S., North Dakota State University

Arthur D. Roderick III '74
*Head Soccer Coach and Staff
Member in the Department of
Physical Education*
B.S., Elizabethtown College

Robert A. Schlosser
*Head Basketball Coach and
Director of Intramural Athletics*
B.S., East Stroudsburg

John R. Saddlemire
*Director of Residence Life
and Student Activities*
M.S., Indiana University

Tina L. Hill
*College Life Assistant for Recreation and
Residence Life*
M.S.M., University of Richmond

Memory L. D'Agostino
Assistant Director of Residence Life
M.S., Shippensburg University

Institutional Advancement

Mary Beth Leymaster Matteo
Vice President for Institutional Advancement
B.A., Temple University

Patrick J. Hall
*Associate Director of Development,
Foundation and Corporate Programs*
M.A., Fordham University

J. Mark Bushong
*Director of Planned Giving and Church
Relations*

Ellen M. Simpson
Assistant Director of Development
B.A., Ohio Wesleyan University

Charles S. Hall
Assistant Director of the Annual Fund
M.P.A., North Carolina State University

Daniel M. Morra
Researcher/Writer
M.A., Slippery Rock University

Julie A. Myers
Director of Alumni, Development Programs
B.S., Towson State University

Jerald L. Garland '59
*Associate Director of Alumni,
Development Programs*
M.S., Temple University

Administrative Staff

Helen S. Bartlett
Biology Laboratory Assistant
B.S., Virginia Polytechnic Institute

Jean D. Beck
*Administrative Secretary to the Provost and
Dean of the Faculty*

Steven G. Bender
Manager, Jay's Nest
B.S., Slippery Rock State College

Bernice M. Booth
Administrative Secretary to the President
A.S., Harrisburg Area Community College

Eugene L. Booth
Equipment Supervisor, Athletics Dept.

Hedwig T. Durnbaugh
College Archivist
M.A.L.S., Rosary College

Barbara Strong Ellis
Library Assistant, High Library
B.A., Ouachita Baptist University

Tamera L. Garrison
*Operations Manager, Department of Food
Services*

Denise L. Gillin
*Administrative Secretary to Executive Assistant
to the President and Secretary of the College*
A.S.B., Central Penn Business School

Patricia K. Hoffman
*Secretary to the Dean of College Life and
Associate Dean of College Life*

Maria E. Horner
Manager of Student Accounts, Business Office
B.S., Millersville University

Mary Ann Killian '58
Duplicating Supervisor
B.S., Elizabethtown College

Doris J. McBeth
*Administrative Secretary to Vice President for
Institutional Advancement*

Patricia A. March
*Administrative Assistant to the Director of
Residence Life/Student Activities*

Helen B. Myers
Administrative Secretary to the Treasurer

Nancy J. Parmer
Administrative Assistant for College Life

Tana L. Parrett '69
Staff Accountant, Business Office
B.S., Elizabethtown College

Mary K. G. Puffenberger
*Administrative Staff, Readers' Services, High
Library*
B.A., Bridgewater College

Randel J. Rossi
Assistant Director of Food Services

Deborah G. Sagar
*Administrative Secretary, Center for Continuing
Education*
B.A., The American University

B. Beverly Schmalhofer '84
*Systems Manager/Analyst Programmer,
Data Center (part-time)*
B.S., Elizabethtown College

Denise F. Shaiebly
Clerk/Operator, Data Center

Alexandra Spayd
Staff Nurse, Health Center
Nursing Diploma, St. Joseph's School of
Nursing

Patricia G. Stepanchak
Staff Nurse, Health Center
B.S. University of Pittsburgh; R.N.

Dorothy J. Troutman '80
Coordinator of the Media Center
B.S., Elizabethtown College

Carol H. Warfel
Library Assistant, High Library
M.A., Indiana University of Pennsylvania

Janet I. Waser
Computer Operator, Data Center

Cheryl J. Way
Secretary, College Relations

Mary Ann Weidman '91
Assistant Manager, College Store
B.A., Elizabethtown College

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Food Services Manager
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Note: Year indicates expiration of term.



Students at the helm of ECTV, the College's television station.

Index

A

Academic Advising 7
 Academic Dishonesty 15
 Academic Dismissal 12
 Academic Due Process 14
 Academic Good Standing 12
 Academic Honors 13
 Academic Judicial System 14
 Academic Majors 3
 Academic Minors 3
 Academic Probation 12
 Academic Program 3
 Core Program 3
 Degrees offered 3
 Majors offered 3
 Minors offered 3
 Academic Standing 12
 Accounting 22. *See also* Business, Dept. of
 Adding Courses 10
 Administration 80
 Advanced placement 6
 Advising 7
 Allied Health Programs 67
 Anabaptist and Pietist Studies Minor 69
 Anthropology 18. *See also* Sociology and
 Anthropology, Dept. of
 Areas of Understanding 4
 Auditing Courses 9

B

Biology, Dept. of 18
 Biology Health Professions 6
 Board of Trustees 82
 Brethren Colleges Abroad program 5
 Business, Dept. of 21

C

Calculation of Grades 11
 Challenge Testing 7
 Change of Major 8
 Change of minor 8
 Change of Personal Information 8
 Change of Registration 10
 Checksheets 8
 Chemistry, Dept. of 25
 Class Attendance 10
 Class Standing 12
 CLEP Examinations 6
 Code of Integrity 15
 College Scholars 13
 Common Core 4
 Communications, Dept. of 28
 Computer Science, Dept. of 31
 Continuing Education 16
 Convocation 16
 Core Program 3
 Areas of understanding 4
 Common core 4
 Old Core/New Core 5
 Course Load 8
 Credit by Examination 6
 Credit Requirements 13
 Credits 11

D

Dance. *See* Fine and Performing Arts, Dept. of
 Dean's List 13
 Declaration of major 8
 Declaration of minor 8

Degrees Offered 3
 Departmental Honors 13
 Directed Study 5
 Directory 73
 Administrative Staff 81
 Board of Trustees 82
 Faculty 73
 The Administration 80
 Dropping Courses 10

E

Early Warning System 12
 Earth Science. *See* Physics, Dept. of
 Economics 25. *See also* Business, Dept. of
 Education, Dept. of 33
 Educational Philosophy and Objectives 2
 Engineering. *See* Physics, Dept. of
 English, Dept. of 35

F

Fine and Performing Arts, Dept. of 38
 Forestry and Environmental Management 67
 French. *See* Modern Languages, Dept. of
 Full-time status 8

G

General Science Certification 68
 German. *See* Modern Languages, Dept. of
 Grade Appeals 16
 Grade Point Average 14
 Grades 11
 Graduation 13
 Ceremony 13
 Credit requirements 13
 Grade point average 14
 On-campus credits 14

H

History, Dept. of 43
 Honors 13

I

Incomplete Grades 12
 Independent Study 5
 Individual Program Adjustments 13
 Interdisciplinary Programs 66
 Anabaptist and Pietist Studies minor 69
 Biology/Allied Health 67
 Forestry and Environmental Management 67
 General Science Certification 68
 International Studies minor 70
 Peace and Conflict Studies minor 70
 Pre-law 71
 Pre-medical 66
 Public Administration minor 71
 Social Studies Certification 69
 International Studies Minor 70
 Internships 6

J

Joint Institution Programs 6
 Biology health professions 6
 Pre-engineering 6
 Pre-forestry 6

L

Leave of Absence 11
 Lecture Series 16
 Lecturers 76

M

Mathematical Sciences, Dept. of 45
 Mission Statement 2
 Modern Languages, Dept. of 48
 Music. *See* Fine and Performing Arts, Dept. of

N

New Core 5

O

Occupational Therapy, Dept. of 49
 Off-Campus Study 5
 Old Core 5
 On-Campus Credits 14
 Overload Credits 8

P

Part-time status 8
 Pass/No Pass Grading 12
 Peace and Conflict Studies Minor 70
 Philosophy, Dept. of 52
 Physical Education and Health, Dept. of 53
 Physics, Dept. of 54
 Placement Testing 7
 Political Science, Dept. of 57
 Pre-allied Health 6
 Pre-engineering 6
 Pre-forestry 6
 Pre-Law Program 71
 Pre-medical Programs 66
 Preregistration 10
 Program Variations and Options 5
 Psychology, Dept. of 58
 Public Administration Minor 71

Q

Quality Points 11

R

Rank in Class 12
 Readmission 11
 Registration 9
 Pre-registration 10
 Religious Studies, Dept. of 60
 Repeating Courses 8

S

Schedule Changes 10
 Secondary Education. *See* Depts. of Biology,
 Chemistry, English, Mathematics
 Social Studies Certification 69
 Social Work, Dept. of 62
 Sociology and Anthropology, Dept. of 63
 Spanish. *See* Modern Languages, Dept. of
 Special Privileges 13
 Special Programs 16
 Student Responsibilities 8
 Study Abroad 5

T

Theatre. *See* Fine and Performing Arts, Dept.
 of
 Transcripts 9
 Transfer of Credits 9
 Trustees 82
 Tutorials 5

V

Variations to Program 5
 Visual Arts. *See* Fine and Performing Arts,
 Dept. of

W

Withdrawal 10
 From class 10
 From College 11
 Medical 11

Elizabethtown COLLEGE



1993-94 Academic Program



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E243H
1993-94

Calendar 1993-94

Calendar 1994-95

Fall Semester

August	23-27	Faculty Meetings and RA and PC Training
	28	Freshmen Arrive
	30	Registration Day; Evening Classes Begin, 6:30 p.m.
	31	Day Classes Begin, 8:00 a.m.
September	6	Labor Day—No Classes
	7	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
	17-18	Parents' Weekend
October	2	Homecoming
	8	Fall Break—No Classes
	20	Mid-term
November	24	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	25-28	Thanksgiving Recess
	29	Classes Resume 8:00 a.m.
December	10	Classes End, 5:00 p.m.
	13-18	Final Examinations

Spring Semester

January	10-14	Faculty Meetings and Workshops
	17	Registration Day
	18	Classes Begin, 8:00 a.m.
March	4	Mid-term
	5-13	Spring Break—No Classes
	14	Classes Resume, 8:00 a.m.
	31	Easter Recess Begins at 5:00 p.m.
April	1-4	Easter Recess
	4	Evening Classes Resume, 6:30 p.m.
	5	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes, Tuesday Evening Classes Meet
May	6	Classes End, 5:00 p.m.
	9-14	Final Examinations
	21	91st Commencement

Summer Session

May 31- July 20

Fall Semester

August	22-26	Faculty Meetings and RA and PC Training
	27	Freshmen Arrive
	29	Registration Day; Evening Classes Begin, 6:30 p.m.
	30	Day Classes Begin, 8:00 a.m.
September	5	Labor Day—No Classes
	6	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	7	Fall Break—No Classes
	15	Homecoming
	19	Mid-term
November	23	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	24-27	Thanksgiving Recess
	28	Classes Resume 8:00 a.m.
December	9	Classes End, 5:00 p.m.
	12-17	Final Examinations

Spring Semester

January	11-15	Faculty Meetings and Workshops
	16	Registration Day
	17	Classes Begin, 8:00 a.m.
March	3	Mid-term
	4-12	Spring Break—No Classes
	13	Classes Resume, 8:00 a.m.
April	13	Easter Recess Begins at 5:00 p.m.
	14-17	Easter Recess
	17	Evening Classes Resume, 6:30 p.m.
	18	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes, Tuesday Evening Classes Meet
May	5	Classes End, 5:00 p.m.
	8-13	Final Examinations
	20	92nd Commencement

Summer Session

May 30- July 19

Elizabethtown College is accredited by the Middle States Association of Colleges and Secondary Schools.

The policies and provisions contained in this catalog are subject to the right of the trustees, administration, and faculty to repeal, change, or amend them at any time.

The provisions of this booklet are not to be regarded as an irrevocable contract between Elizabethtown College and the student or between the College and the parents or guardians of the students.

Elizabethtown College complies with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable, federal, state, and local statutes, ordinances, and regulations. Elizabethtown College does not illegally discriminate against students, prospective students, employees, or prospective employees on the basis of race, color, religion, ethnic or national origin, personal handicap, age, or sex.

The Academic Program



DATE DUE



Contents

Educational Philosophy and Objectives	2
The Academic Program	3
Course Descriptions	19
Biology	19
Business	22
Chemistry	27
Communications	30
Computer Science	33
Education	35
English	37
Fine And Performing Arts	40
(Art, Dance, Music, Theater)	
History	46
Mathematical Sciences	47

Modern Languages	50
(French, German, Spanish)	
Occupational Therapy	51
Philosophy	54
Physical Education And Health	55
Physics, Earth Science, Engineering	56
Political Science	59
Psychology	60
Religious Studies	62
Social Work	64
Sociology And Anthropology	65
Interdisciplinary Programs	68
Directory	75
Index	86

1993-1994

The High Library
Elizabethtown College
Elizabethtown, PA 17022-2227

Elizabethtown College

Elizabethtown, Pennsylvania 17022-2298

Elizabethtown College:

Educational Philosophy and Objectives

The purpose of the founders of the College was to achieve "such harmonious development of the physical, mental, and moral powers of both sexes as will best fit them for the duties of life and promote their spiritual interests." The motto of the College for years expresses this goal: "Educate for Service."

The original charter statement of purpose identified the important outcomes of education as being the development of critical and constructive habits of thought; the capacity for clear and coherent self-expression; the understanding of the natural, social and cultural world; the acquiring of a sense of personal, ethical, and spiritual values and of responsibility to the society; and the acquisition of skills and knowledge in a specialization to make the student an effective and productive member of society. In developing a statement of philosophy and objectives that both reflect our present understandings, the following represents a reasonably broad institutional consensus of the appropriate educational philosophy and goals for the years ahead to which the full College community can and should relate:

Founded by members of the Church of the Brethren in 1899, Elizabethtown College aims to develop sound intellectual judgment, keen moral sensitivity and an appreciation for beauty in the world. This educational process fosters the capacity for independent thought and commitment to personal integrity. In keeping with its historical and religious tradition, the College affirms the values of peace, justice, and human dignity, striving to achieve a distinctive blend of the liberal arts and professional studies. This union of the world of spirit and the world of work is expressed in the College motto, "Educate for Service," and on its seal, *Deus Lux et Veritas*.

The College fulfills this mission by:

- Striving to attain a diverse academic community.
- Promoting cultural pluralism and international understanding in a collegial community.
- Creating an environment that encourages the spirit of free inquiry, stimulates intellectual curiosity, and cultivates academic achievement.
- Developing the skills for critical analysis and effective communication.
- Designing programs that foster maturity, leadership, and responsible citizenship.

- Providing campus-wide support services necessary for the development of mind, body, spirit.
- Serving as a learning, resource, and cultural center for society at large.

The institutional goals for the academic program at Elizabethtown College, in outline, reflect this general statement of educational philosophy:

1. A threefold purpose in the education of students:
 - a. A general education (core) requirement, developing analytical and relational process of thought, clear and coherent means of self-expression, and a growing understanding of self and environment through distributional and integrative requirements in the liberal arts.
 - b. A specific education requirement or major, preparing the student for advanced studies and/or career opportunities by adding the different experience of specialized in-depth knowledge to the breadth of the general educational requirements.
 - c. A body of electives ensuring flexibility in each student's program that will best suit individual needs and interests, whether in general or major areas of study.
2. Response to contemporary needs for greater international understanding, by providing general education in intercultural studies and languages.
3. Provision of support in both general education and major programs for cross-disciplinary and interdisciplinary education.
4. For major disciplines of study, inclusion of opportunities in most of the liberal arts traditions of sciences, fine arts, humanities, and social sciences, and in the professional areas; while maintaining balance between professional and liberal arts programs of study for majors.
5. Provision for adult educational opportunities in a variety of traditional and non-traditional modes, integrated as far as possible with the regular educational program and faculty.
6. Fostering an environment supportive of faculty research and professional development.
7. Supporting as a part of its regular educational program quality experiential-learning programs such as clinical experiences, supervised internships, field study and other off-campus courses, and similar activities.
8. Continuing to support or to develop as appropriate, strong cooperative programs with other institutions of higher learning.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of 125 semester hours of credit, including the completion of all requirements of the major and the Core Program; a grade point average of at least 2.00 in the major; and a grade point average of at least 2.00 overall.

The College offers three additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B.S.
Business Administration, B.S.
Chemical Physics (Physics), B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Computer Engineering (Physics), B.S.
Early Childhood Education, B.S.
Economics (Business), B.A.
Elementary Education, B.S.
Engineering (Physics), B.A.
Engineering Physics (Physics), B.S.
English, B.A.
Environmental Science (Biology), B.S.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Industrial Engineering (Physics), B.S.
International Business, B.S.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages (French, German or Spanish), B.A.
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.

Occupational Therapy, B.S.
Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A.
Religious Studies, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work, B.A.
Sociology-Anthropology, B.A.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major department. Courses in the minor area may be selected from Core courses or free electives.

The College offers the following minors. For details, consult the departmental listings.

Anabaptist and Pietist Studies (Interdisciplinary)
Anthropology (Sociology)
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Communications
Computer Science
Economics (Business)
English
Fine and Performing Arts
History
Human Services
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Peace Studies (Interdisciplinary)
Philosophy
Physics
Political Science
Psychology
Public Administration (Interdisciplinary)
Religious Studies
Sociology
Theater
Visual Arts

The Core Program

Through the Core Program, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to experience a core curriculum of traditional and innovative liberal arts areas that complement both the more intensive studies in the academic major and minor and the less structured framework of elective courses.

Core requirements are of two kinds: the Common Core, which consists of the Freshman Seminar and the Junior/Senior Colloquium; and Areas of Understanding in which students may choose from approved Core courses in prescribed academic areas.

Alternatives to the Core Program, or deviations from it, must be approved in advance by the Academic Standing Committee and the Dean of the Faculty.

Common Core

Freshman Seminar

3 cr. hrs.

Entering freshmen take a Freshman Seminar during their first semester.

FS100 Freshman Seminar*

3 credits. The Freshman Seminar provides an educational experience which is composed of several important components. First, it aims to develop intellectual skills such as critical analysis and synthesis, and communication skills such as speaking and writing. Second, it introduces students to the intellectual life of the College and lays the foundation for self-directed, independent thinking. For these reasons, the Freshman Seminar is planned to assist the student in the transition from high school to college.

Junior/Senior Colloquium

3 cr. hrs.

All courses in all Areas of Understanding must be completed before students begin the colloquium. The theme which the Junior-Senior Colloquium will address for the academic year 1993-94 is "Individuality and Community."

JSC300 Junior/Senior Colloquium*

3 credits. In the Junior/Senior Colloquium, students return to the seminar setting and explore a selected contemporary issue of national or world significance from perspectives other than those of the major. They are engaged in serious discourse with students and faculty from other disciplines, examining broader intellectual, social, and ethical concerns associated with liberal learning. This experience culminates in the writing of a major paper which integrates prior learning and the diverse studies of the undergraduate experience.

Areas of Understanding

Power of Language

3 cr. hrs.

Based upon writing skill level, new students are required to take in their first year either English 011 (a college composition preparatory course that does not count for Core or graduation credit), English 100*, Writing and Language (a college composition course), or an advanced 100-level Power of Language course, En 150*, Com 105*, or Ph 110*. Students placed in English 011 must eventually take English 100* for Power of Language Core credit. Students placed in English 100* must successfully complete English 100* for their Power of Language core. Students who receive AP or transfer credit for English 100* or who enroll in English 100*, cannot receive credit for English 150*, Advanced Writing and Language.

Language is the most important means of communicating in all human societies; it is the ability that, above all others, distinguishes us from other forms of life. In a democratic society, it is the essential means through

which policies are formulated, argued for, and accepted or rejected. The hallmark of a liberally educated person is the ability to articulate ideas.

This requirement is intended to introduce students to potentialities of the English language supported by a knowledge of its history. It should provide the opportunity for extensive writing experience in the use of logic and rhetoric.

Courses satisfying this requirement are:

- Com 105* Fundamentals of Speech
- En 100* Writing and Language
- En 150* Advanced Writing and Language
- Ph 110* Logic and Critical Thinking

Mathematical Analysis

3-4 cr. hrs.

Based upon mathematical analytical skill level, new students are required to take in their first year either Math 011 (a college mathematics preparatory course that does not count for Core or graduation credit), or a 100-level mathematical analysis course. Students placed in Math 011 must successfully complete this course before enrolling in mathematical analysis courses.

This requirement stresses competency in quantitative reasoning and mastery of problem solving skills. Courses satisfying this requirement help students to understand quantitative data, for example, to recognize their use in making future predictions, to acknowledge that they can be employed in support of argumentation, and to realize that they can be manipulated to mislead.

Courses satisfying this requirement are:

- CS 121* Computer Science I
- Ma 105* Mathematics for Liberal Studies
- Ma 121* Calculus I
- Ma 151* Probability and Statistics
- Ph 180* Symbolic Logic

Creative Expression

3 cr. hrs.

The Creative Expression requirement stresses appreciation of the diversity of human perception and its expression. Courses satisfying this requirement concentrate on the history, theory, creation, performance, and criticism of art forms from music, painting, drama, cinema, architecture, sculpture, and the graphics arts. They should acquaint students with basic concepts and language employed in the study and analysis of these works, preparing them to react to art forms and make aesthetic judgments.

Courses satisfying this requirement are:

- Art 105* Drawing I
- Art 220* Sculpture
- En 110* Literature: Expressive Form
- En 116* Film as Literature
- En 135* Shakespeare Through Performance
- En 251* The Literature of Laughter
- En 281* Writing and Analyzing the Short Story
- Mu 106* Interpretation of Music
- Mu 115* Music Fundamentals at the Keyboard
- Th 155* Introduction to Theater Technology
- Th 165* Basic Acting

Cultural Heritage**6 cr. hrs.**

This requirement introduces students to significant historical knowledge which helps them understand themselves and the society in which they live. Through critical analysis of literature, science, art forms, values, social institutions, and governments associated with Western thought, students are provided with the historical consciousness necessary to intelligently respond to major issues of the modern world.

Courses satisfying this requirement are:

- Art 105* Introduction to Art
- Art 203* Twentieth Century Art
- Com 245* Communication Analysis and Culture
- En 105* Introduction to Literature
- En 112* Introduction to Poetry
- En 221* The Literature of Medieval England
- En 222* Literature of the Renaissance
- En 223* English Neo-Classicism
- En 224* English Romanticism
- En 225* Victorian British Literature
- En 226* Twentieth Century British Literature
- En 241* American Literature I
- En 242* American Literature II
- En 246* Minority Voices in American Literature
- Hi 115* Modern European History
- Hi 215* English History to 1688
- Hi 216* English History Since 1688
- Hi 218* Europe in the Twentieth Century
- Mu 105* Introduction to Music Literature
- Mu 242* Mozart and Eighteenth Century Classicism
- Ph 105* Introduction to Philosophy
- Ph 201* Ancient and Medieval Philosophy
- Rel 101* Religious Literature of Ancient Israel
- Rel 102* Religious Literature of Early Christianity
- Th 105* Introduction to Theater

**Foreign Cultures
and International Studies**
3-4 cr. hrs.

This requirement is satisfied by courses with a contemporary international, cultural, or social frame of reference. In these courses students study the human experience from a cultural point of view different from that of the U.S. and develop understanding of the interdependence among countries.

Courses satisfying this requirement are:

- An 111* Understanding Human Cultures
- BA 251* Cross Cultural Understanding
- ESL 112* Advanced English as a Second Language and American Culture
- Fr 112* Fundamentals of Language and Culture II
- Fr 211* Communication Through Language and Culture I
- Fr 212* Communication Through Language and Culture II
- Ger 112* Fundamentals of Language and Culture II

- Ger 211* Communication Through Language and Culture I
- Ger 212* Communication Through Language and Culture II
- Hi 220* History of Soviet Union
- Hi 227* History of Africa
- Mu 205* Music of Non-Western Cultures
- PS 245* International Relations
- Rel 221* Western Religions
- Rel 222* Eastern Religions
- Sp 112* Fundamentals of Language and Culture II
- Sp 211* Communication Through Language and Culture I
- Sp 212* Communication Through Language and Culture II

Natural World**7-8 cr. hrs.**

This requirement is satisfied by systematic study of the natural world and must include a minimum of one laboratory course. These courses stress study of subject matter and methods of the discipline but also emphasize ethical and social issues that arise when science influences technological development.

Courses satisfying this requirement are:

- An 201* Physical Anthropology
- Bio 105* Principles of Biology
- Bio 106* Genetics, Evolution, and Man
- Bio 108* Living With the Environment
- Bio 111* Introduction to Biological Sciences
- Bio 206* Biotechnology
- Ch 101* General Chemistry: Practical Principles
- Ch 105* General Chemistry: Theoretical Principles
- Ch 113* Organic Chemistry I
- ES 111* The Dynamic Earth
- ES 112* The Geology of Landscape
- ES 215* Meteorology
- Phy 101* Physics I
- Phy 113* Spacetime Physics
- Phy 114* Cosmology
- Phy 212* Astronomy
- Phy 216* Quantum Theory and Reality
- Psy 208* Health Psychology

Social World**6 cr. hrs.**

The Social World requirement is met by courses which emphasize the ways in which behavior is shaped, ranging from the formation of the self to the interaction of nations.

Courses which satisfy this requirement are:

- Com 115* Media and Society
- Ec 203* The Greatest Economic Mystery Series
- Hi 201* History of the United States to 1877
- Hi 202* History of the United States Since 1877
- Hi 210* Europe Since 1789
- PS 111* American National Government
- Psy 105* General Psychology
- Psy 237* Psychology of Women

Rel 266*	Psychology of Religion
So 101*	Discovering Society
So 204*	Population and Global Issues
SW 151*	Social Welfare Issues in Contemporary Society
SW 180*	Interpersonal Helping Skills
SW 233*	Human Behavior in the Social Environment

Values and Choice

3 cr. hrs.

Complete three credit hours in Values and Choice courses.

This requirement is met by courses that examine values and morality as they relate to matters of choice and responsible citizenship.

Courses that satisfy this requirement are:

En 113*	Introduction to Drama
En 114*	Introduction to Fiction
En 121*	Money and Status in American Literature
En 245*	Growing Up in America
Hi 208*	Technology and Values in the American Experience
Hi 221*	History of Non-Violence
Ph 115*	Ethics
PS 105*	Western Political Heritage
Rel 105*	Forms of Religious Experience
Rel 165*	Introduction to Peace and Conflict Resolution
Rel 213*	Religion and Gender
Rel 215*	Social Ethics

Physical Well Being

3 cr. hrs.

Complete three courses in Physical Well Being, at least two courses of which must be devoted to physical activity. No more than five PWB credits may be counted for graduation credit.

This requirement prepares students for a lifetime commitment to physical activity and well being with an emphasis on individual fulfillment. At least two courses must be devoted to physical activity.

The courses that satisfy this requirement are:

Da 101*	Interpretive Movement
Da 102*	Introduction to Ballet
PE 105*	Swimming
PE 115*	Physical Fitness and Wellness
PE 120*	Aerobics
PE 125*	Tennis
PE 140*	Bowling
PE 145*	Field Hockey/Volleyball
PE 146*	Racquetball
PE 150*	Volleyball
PE 161*	Adaptive Physical Education
PE 165*	Golf/Badminton
PE 175*	Archery/Badminton
PE 185*	Basketball
PE 190*	Horsemanship
PE 194*	Skiing

PE 195*	Soccer
Psy 108*	Addictions

Additional Requirements:

- Students must take at least four 200-level courses to complete the Core Program. Prerequisites for 200-level Core Program courses include completion of the Freshman Seminar; Mathematical Analysis; Power of Language; and either three other 100-level Core Program courses or sophomore standing.
- In Areas of Understanding requiring two or more courses, students must take the courses in different disciplines.
- Physical Well Being courses are excluded from the above restrictions, and do not satisfy the 100-level prerequisite requirements to take 200-level Core Program courses.
- Students may count only one course in their major department for Core. The major department course must be an elective in the department and may not fulfill a major requirement.
- Students are required to complete the appropriate level of mathematics, English, and/or modern language courses as determined by the College.
- Seniors may not enroll in 100-level Core Program courses except with the permission of the dean of the faculty.

Program Variations and Options

In addition to majors and minors, Elizabethtown College offers a number of alternative learning opportunities both on and off campus. On-campus study includes special programs which emphasize individual study and close work with a member of the faculty. Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is undertaken for the special investigation of a topic or for the benefit of the advanced student whose special academic requirements cannot be met by regular course offerings. (It is not used simply to assemble credits for graduation.)

To apply for an Independent Study, the student must make a preliminary definition of the topic or issue to be pursued, securing the permission of the faculty sponsor and the chair of the department in which the Independent Study is to be undertaken. The faculty member or members sponsoring the Independent Study are involved in planning and evaluating the project, but the student must be capable of independent work.

Independent Study is not tied to the academic calendar, and a project may be begun or ended at any point. The student must register the project with the Office of Registration and Records at the beginning of the semester during which it will be completed. Application forms for Independent Study are available in the Office of Registration and Records.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular catalog course which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional surcharge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 17 hours as a result of the Directed Study registration are charged the current part-time rate for tuition for those hours in excess of 17, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a catalog course. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is responsible for the regular tuition, and a surcharge.

Note: Students must register for Directed Studies and Tutorials *prior* to beginning course work. Registration forms are available in the Office of Registration and Records.

Off-Campus Study

Study Abroad

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering two types of international experiences. The first involves study in an environment which features a foreign language. For example, students may study at Phillips-University, at Marburg/Lahn, Germany; at the University of Strasbourg, Strasbourg, France; at the University of Nancy, Nancy, France; at the University of Barcelona, Barcelona, Spain; and at the University of Azuay, Cuenca, Ecuador. The second type of experience occurs in a setting where knowledge of a second language is not a requirement. Programs of this nature exist at the Dalian Institute of Foreign Languages, Dalian, China; the Cheltenham and Gloucester College of Higher Education, Cheltenham, England; the LaVerne College of Athens, Athens, Greece; and the Hokusei Gakuen University, Sapporo, Japan. Students in the foreign language setting receive intensive language instruction prior to the opening of the university. A wide selection of courses in the social sciences and humanities is available in the BCA programs.

To qualify for the BCA program, the student should have a 3.0 average. Students bound for Germany must have completed the equivalent of German 212 and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of French 212 or Spanish 212, outstanding students who have completed French 211 or Spanish 211 will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country.

The credits earned abroad are transferred toward the degree at Elizabethtown. Students' courses are approved by the director of records prior to departure. Interested students should contact Dr. Sharon R. Trachte, BCA program coordinator, for information and should confer with their major advisor.

Joint Institution Programs

In these programs, students study at the College and at affiliated academic institutions or clinical facilities. Four major programs are offered with other academic institutions: pre-forestry with Duke University; pre-engineering with Pennsylvania State University; biology health professions and pre-allied health with Thomas Jefferson University.

In the **Pre-forestry** major, the student spends three years at the College and an additional year in professional studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Pre-engineering is a 3-2 program with The Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of study in an engineering major, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from The Pennsylvania State University. For further details, see the description in the Department of Physics listing.

The Biology Health Professions major is a 3-2 program with Thomas Jefferson University and other selected colleges and universities which grant degrees in the allied health sciences. The student spends three years at the College as a biology-allied health major. Upon the transfer of up to 29 credits from the upper level institution, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional program results in the awarding of a bachelor of science degree from Thomas Jefferson University or another university.

In the **Pre-allied Health programs**, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Department of Biology listing.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students' education. In music therapy, occupational therapy, social work, and medical technology,

students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Fine and Performing Arts, Chemistry, Occupational Therapy, and Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes special guidelines, copies of which are available from the director of records or department chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. General Examinations

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- a. All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more semester hours of recorded college credit).
- b. Up to 29 semester hours of credit may be awarded for scores at the fiftieth percentile or higher on the General Examinations. None of the credits may duplicate college credits

already recorded on the transcript or credits for course work in progress at the time of the examination.

- c. For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Three of these credits may be applied to the Core Program requirements in Natural World.
- d. For the examinations in Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the Core Program.
- e. For the English Composition and Mathematics Examinations, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the Core Program.

2. Subject Examinations

Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty.

There are two types of Challenge Tests:

1. **Tests for Academic Credit** are *Challenge Exams* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the College catalog. Requests for Challenge Exams must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Exam option as are Freshman Seminar and Junior/Senior Colloquium in the Core Program.
2. **Tests for Placement and/or Waiver** are those given for placement in a course sequence such as those given in modern languages and mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Challenge Tests given at the initiative of the College are administered without fee to the student. There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a Test for Academic Credit is \$75; the fee for a Test for Placement and/or Waiver is \$50. In addition, appropriate tuition is charged for academic credit awarded as a result of Challenge Tests; the charge

is 50% of the appropriate part-time tuition rate in effect at the time the test is administered.

Placement Testing

During the summer orientation program all new students take a mathematics placement test. In addition, students with two, three, four or five years of language instruction must take the appropriate modern language placement test. Students who have studied a language less than two full years, and students who have never studied a language, do not take the test. The languages tested are French, German and Spanish. If students have studied more than one of these languages, they take the placement test in the language which they have had the most intensive study or the language in which they wish to pursue further at the college level.

Students who wish to use a modern language to fulfill the Foreign Cultures and International Studies Area of Understanding in the Core Program complete either Modern Language 112 or 211 or 212. Language background and placement test results determine the appropriate level of college language study (112, 211 or 212). Students who demonstrate competence at the 111 level enroll in 112. Students who demonstrate competence at the 112 level enroll in 211. If competence is demonstrated at the 211 level, the appropriate course is 212.

The mathematics placement test determines placement in Math 011, Intermediate Algebra, or a 100 level mathematics analysis course. Students placed in Math 011 must successfully complete this course before enrolling in other mathematics or mathematics analysis courses.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the Core Program, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Academic Advising

Each student who is enrolled in a degree program is required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors, and minors. (Certain non-degree students are also assigned advisors.)

Freshman Advising Program. The Freshman Advising Program is designed to touch on all aspects of the freshman experience. The goal is to assist freshmen in realizing the maximum educational benefits available to them by helping them to better understand themselves and to learn to use the resources of the College to meet their

special educational needs and aspirations. Course selection is included but is not the primary task to be accomplished.

Upperclassman Advising. Upperclassmen who have declared a major are assigned an academic advisor from their major department. Upperclassmen who have not yet declared a major are assigned an advisor from the Personal and Career Counseling Service.

All advisors work closely with students during the preregistration period for course selection for the coming semester. Consultation with the advisor also occurs during the schedule change period and the drop-add period at the beginning of each semester. Departmental advisors also provide assistance in regard to graduate or professional school and/or career planning.

Student Responsibilities

Students are required to consult with their major advisors as to course selection, course sequences, graduation requirements, etc. (Consultation with the second major or minor advisor is an expectation but not a requirement.) Preregistration Course Request Sheets, Request for Schedule Change forms, and Drop and Add forms require the major advisor's signature, as do certain other forms and documents from the Office of Registration and Records.

The advisor's signature on various documents indicates that the student has consulted with the advisor; *however, it is the student's responsibility to ensure that all graduation requirements have been met and that other requirements, regulations, or deadlines have been observed.*

Advising sheets for academic majors and minors are available in the Office of Registration and Records. These sheets are helpful in noting the completion of program requirements.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are assigned for majors, second majors and minors. Students are expected to consult with these advisors in regard to course selection, course sequence, and graduation requirements.

Declarations and changes of majors and minors are facilitated in the Office of Personal and Career Counseling Services. When a change of major or minor occurs, records are transferred from one department to another; however, the student must initiate the change.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported in writing to the Office of Registration and Records immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Changes of name, social security number, or sex, require legal documentation.

Full-time/Part time Status

A student taking 12 or more credit hours per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking fewer than 12 hours per semester pays the regular semester hour rate plus applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credit hours per semester to be eligible for intercollegiate athletic competition.

Course Load

Since the completion of 125 semester hours of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of approximately 16 semester hours for each of eight semesters. However, many students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

Students may carry up to 17 semester hours of courses in a semester. The approval of the associate dean of the faculty is required for any overload credit hours for which there is an additional fee. The petition form for the overload is obtained in the Office of Registration and Records.

The maximum number of credits which a student may carry in a seven week summer session is nine. Approval from the associate dean of the faculty and a 2.7 cumulative G.P.A. is required to take overload credits in the summer.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Office of Registration and Records. Failure to do so will result in a duplication of hours carried, a possible delay in graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated are as follows:

1. A student may repeat any course in which the student receives an *F* or *NP*.

2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's advisor and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a course that is prerequisite to a Core

Program requirement. *The student must repeat the course in which the D grade was received within one year of the original enrollment in the class* (or the next semester in which the course is offered if the course is offered less frequently than once a year).

3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit are determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit hours are included in the total hours to determine full-time status and overload charges. A fee is charged on a per credit-hour basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Office of Registration and Records. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C- or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior* to enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the Director of Records. Students must request that the Registrar's Office of the transferring institution send an official transcript to the Office of Registration and Records at Elizabethtown College. Facsimile (fax) copies and student delivered transcripts will not be accepted.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Office of Registration and Records, in person or by mail, at least one week prior

to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/ professional schools or for employment. Two copies of the final record are also available free to each student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Office of Registration and Records at least one week prior to the date needed. Federal law requires that all requests must be made **in writing by the student**. Neither telephone requests nor facsimile (fax) requests can be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Office of Registration and Records; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.
2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.
5. The \$2.00 fee, if applicable.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Elizabethtown College does not send or accept facsimile (fax) copies of transcripts.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a non-degree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses—not for a time or a professor. There is no guarantee that a student will be registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister, a student must have met all financial obligations, including the payment of the preregistration deposit for the next semester. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the advisor. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of The Center for Continuing Education for details about registration.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Office of Registration and Records.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds must be approved by the academic advisor and completed through the Office of Registration and Records. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; the course drop is not complete until this is done.

Class Absences and Withdrawal Policy

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor or the College may dismiss a student from a course for excessive absences. Such dismissals in weeks 1-4 of the semester result in removal of the course from the student's record; after the fourth week, a grade of W/F is recorded for the course. A student may appeal to the Academic Standing Committee for reinstatement to the course.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Long-Term Absences

Long-term absences from all courses/campus may result in mandatory withdrawal from the College. After 15 consecutive class days of absence from all classes, a student is considered to have withdrawn from the College. (Students absent for verified medical reasons will be granted a Medical Withdrawal (see below).)

Withdrawal

Withdrawal from Classes

Students withdraw from classes through the Office of Registration and Records. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or W/F. All withdrawals after the end of the eleventh week of the semester receive grades of W/F unless the withdrawal is from College and is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of W/F is calculated into the student's average as though it were an F.

Withdrawal from College

Students who withdraw from the College during a semester also withdraw from all of their classes for that semester. Full-time students withdraw from the College through the Office of Personal and Career Counseling Services; part-time students withdraw through the Office of Registration and Records. Students who withdraw during the semester are expected to leave the campus as of the effective date of their withdrawal.

For purposes of billing, room reservation, academic responsibility, etc., the effective date of withdrawal is the date on which the completed official notice is returned to the Office of Personal and Career Counseling Services or the Office of Registration and Records. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical Withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstances. Medical Withdrawal assumes an incapacity that prohibits acceptable academic performance, not simply a hardship or inconvenience. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Medical Withdrawal is withdrawal from the College and, therefore, from all courses. A student does not selectively withdraw from individual courses under the rubric of "medical withdrawal."

Readmission

Students who leave the College in good academic standing (minimum 2.0 cumulative grade point average) gain readmission by written request to the Office of Registration and Records. Students who leave the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission.

Leave of Absence

A student may take a leave of absence from the College to study in an approved off-campus program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Administrative fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$100 deposit must be returned to the Office of Registration and Records by May 1 or December 1 to ensure a place in the College and in courses.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	No-Pass (failure)
AUD	Audit

Quality Points

A 4 point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester
	Hour of Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Grade Point Average Calculation

The grade point average is dependent upon the credit hours attempted and the quality points earned. To determine the grade point average for a semester, multiply the credit hours for each course by the quality points for the grade earned in the course, sum the quality points for the semester, and divide the total quality points by the total credits attempted for the semester. Courses in which a

grade F or WF is received are included in the calculation. Courses in which a grade of W or I is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester GPA. All courses that could fulfill a requirement for the major are used for the major GPA calculation. The same applies to second majors and minors.

Incomplete Grades

A grade of "I" may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of "I" are assigned for *extenuating circumstances* only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the "I" in cases of suspected academic dishonesty.

All grades of "I" received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of "F".

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn semester hours of credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take their Physical Well Being courses on a pass/no pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).
2. The cumulative average must be 2.75 or higher.
3. The selected course may carry no more than four semester hours of credit and **must be a free elective**. It may not satisfy a Core Program requirement, and may not be a course that could fulfill a requirement for the student's major or minor.
4. No more than four courses in total (excluding Physical Well Being) may be taken under this grading option.

Pass/No Pass registration forms are available in the Office of Registration and Records. Once a course is registered under the Pass/ No Pass option, it may not be changed. Grades of D- or higher are recorded as Pass; grades of F are recorded as No-Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying D or F grades in 100 or 200-level courses at the end of the fifth week of the semester are notified of their deficient performance.

Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits, a junior; with 90 credits, a senior.

Rank in Class

Class rank is calculated for students pursuing degree programs. The calculation is done once a year and is based on the credits, grades, and quality points earned at Elizabethtown College. Class ranks for the freshmen, sophomore, and junior classes are determined at the completion of the spring semester. Rank in class for graduates is also determined after the spring semester and includes graduates from the previous summer and fall as well as from the current spring semester.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

Semester hours		Cumulative Grade Point Average
Attempted	with	below:
1 - 18		1.70
19 - 36		1.80
37 - 54		1.90
55 - 72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 semester hours, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses or seven semester hours.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is experiencing academic difficulty. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative GPA) may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative GPA) must petition the Academic Standing Committee for readmission. A student who is readmitted to the College after an absence of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the registrar.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the provost, who will direct warranted appeals to the Academic Standing Committee.

Academic Honors

Dean's List

A full-time student who earns a semester grade point average of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

A College Scholar is a currently enrolled student who, having completed at least 60 credit hours at the College, has achieved a cumulative grade point average of 3.75 or higher. Scholars are identified at the end of the spring term, and are publically recognized at the Convocation at the beginning of the following academic year. They are awarded a certificate and their status as College Scholar is recorded on their permanent record.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative grade point average of 3.50 is graduated *cum laude*; an average of 3.75, *magna cum laude*; an average of 3.90, *summa cum laude*. A transfer student receives honors if the student earns

a minimum of 60 semester hours credit at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria include, but are not limited to, the following: the student must have a minimum G.P.A. of 3.5 in the major/minor and overall cumulative G.P.A.; possess outstanding abilities in areas such as research projects or papers, etc., and have pursued academically rigorous courses in the discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's List of Honor Students during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis without registration or credit.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work may participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed on the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit internship.

Credit Requirements

To receive a Bachelor of Arts or Bachelor of Science degree from Elizabethtown College, the student must earn

a minimum of 125 semester hours of credit. (Ma 011, En 011, and ESL 111 are not counted toward this credit hour graduation requirement.) In the case of engineering, medical technology, and other special programs, the number of semester hours required is indicated in the program outline (see departmental listings for specific information).

No more than one degree is ever awarded by Elizabethtown College; however, students may complete a second major, a minor, or teacher certification subsequent to graduation.

Program Requirements

Students are required to complete successfully all requirements of the major and all of the Core Program requirements. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

Grade Point Average

To be eligible for graduation, a student must have a grade point average of at least 2.0, with a minimum average of 2.0 in a major (and a 2.0 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have an average of at least 2.0 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in the major, at least eight of which are at the upper level (normally 300 and 400 level), 2) at least 30 of the last 60 credits, and 3) the Junior/Senior Colloquium and at least one 200 level Core Program course.

To recognize completion of a minor on the transcript, a student must have completed at least nine credits of the requirements on the Elizabethtown College campus, and must have earned a baccalaureate degree at Elizabethtown College.

Note: Credits earned at the Dixon University Center in Harrisburg or in the Brethren Colleges Abroad program while the student is matriculated at the College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the catalog dated four years prior to graduation, or, for major requirements, by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or, for major requirements, the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine require-

ments for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the registrar by February 15.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature is assumed by the Academic Standing Committee and the Academic Review Committee.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Office of Personal and Career Counseling Services, who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Committee is comprised of three faculty members, two students, and one administrator appointed by the president. The provost serves as convener of the committee but is not a member and does not vote in decisions made by the committee. The committee handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard to Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments.

With Regard to Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.
2. To request a hearing before the Academic Review Committee when found by a faculty member to be in violation of the standards of academic integrity and to

receive a written statement from that board summarizing the findings of the board and its disposition of the matter.

3. To request a hearing before the Academic Standing Committee when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.

4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably.

Students entering in fall of 1991 or subsequent semesters are asked to adhere to the Code of Integrity adopted by both the Student Senate and the Faculty Assembly.

CODE OF INTEGRITY

Elizabethtown College is a community engaged in a living and learning experience, the foundation of which is mutual trust and respect.

Therefore, we promise to represent as our work only that which is indeed our own, and we will strive to behave toward one another with civility and with respect for the rights of others.

Reflecting the Code of Integrity as adopted by both the Faculty and Students of Elizabethtown College, we pledge to refrain from all forms of lying, plagiarizing, and cheating. In recognition of this promise, on selected assignments we will sign a pledge stating: "I support the Code of Integrity. I will uphold honesty in our community."

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of course assignments as well.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information when such information is not appropriate. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of F in the course and/or possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

Instances Involving Coursework:

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.
2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have a faculty member, another student, or a member of the Personal and Career Counseling Service present as an observer.
3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A copy of this notification is sent to the Office of the Provost. Should the department chair not be in agreement with the faculty member, and the matter not be resolved at the department level, both the faculty member and the department chair will give written notification, with rationale, to the provost. The provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.
4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Committee. The request for a hearing must be presented in writing to the provost within five days of receipt of the notice of information.
5. The provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is the provost's judgment that academic dismissal is appropriate, the provost will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.
6. The student will have the option of accepting the provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the Academic Standing Committee within five days of receipt of the provost's decision.

Other Instances:

All forms of dishonesty in academic matters are violations of the Standards of Academic Integrity and are the concern of the Academic Review Committee. Inappropriate actions, for example, lying to College officials or forgery of advisors' signatures, are violations equivalent to cheating and plagiarism in coursework. Such dishonesty will be dealt with following the general procedures set forth above. Cases are reviewed individually and according to the circumstances of the violation; however, possible penalties include suspension or dismissal from the College.

Grade Appeals

Questions concerning grades should be called to the attention of the professor immediately after the official grade report is received from the Office of Registration and Records.

Procedures For Grade Appeals

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.
2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal. A request for the meeting must be submitted within thirty days of the date on which the grades are formally issued from the Office of Registration and Records.
3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision. Should the faculty member and the department chair not be in agreement, and the matter not be resolved at the department level, both the faculty member and the department chair will give written statements to the provost explaining the reasons for upholding or altering the grade. The Provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.
4. The student will have the alternative, within ten days of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the provost.
5. The provost will review the detail of the appeal. The Academic Review Committee will hear warranted appeals as determined by the provost.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the Dixon University Center, 2986 N. Second St., Harrisburg, PA 17110.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisors to develop individualized study plans leading to Bachelor of Professional Studies or Bachelor of Liberal Studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to satisfy the degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September, 1992, the speaker was the Reverend R. Maurice Boyd, noted preacher and writer, and the senior minister of the New Church of New York.

Other speakers have been Jacob Neusner, graduate research professor of religious studies, University of South Florida (1991); Carlos Fuentes, the noted Mexican writer, statesman and scholar (1990); Wallace T. MacCaffrey, Harvard University scholar and authority on British history of the 16th and 17th centuries (1989); and the Reverend William Sloane Coffin, president of SANE/FREEZE, Washington, D.C. (1988).

Lecture Series

Two lectures are sponsored at Elizabethtown College in which national and international leaders speak on political, ethical, social, and economic topics of major importance.

The Frank S. Carper Lecture on Ethics, Business

and the Professions is an endowed lectureship named in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The 1992 Carper Lecturer was Arthur M. Schlesinger, Jr., the Pulitzer Prize winning historian and noted commentator.

Previous lecturers were the Reverend Andrew M. Greeley, writer, novelist, poet, journalist, and professor of sociology at the University of Arizona (1991); Michael Novak, director of social and political studies, American Institute for Public Policy Research, Washington, D.C. (1989); and James O. Pickard, Secretary of Commerce in Pennsylvania from 1982-86 and the chief executive officer of Globus Group, Inc., York, Pa. (1988).

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in honor of the late John F. Chubb, Class of 1961, who was a trustee of Elizabethtown College and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown, Pennsylvania.

The 1993 Chubb Lecturer was Dr. David A. Ricks, vice president for academic affairs and professor of world business at "Thunderbird," the American Graduate School of International Management in Glendale, Ariz.

Previous lecturers were Rozanne L. Ridgway, president of the Atlantic Council of the United States and former ambassador to the German Democratic Republic and to the Republic of Finland (1991); W. Michael Blumenthal, chairman and chief executive officer of UNISYS and the U.S. Secretary of the Treasury from 1977-79 (1989); and the late Honorable Willy Brandt, chancellor of the Federal Republic of Germany from 1969-74 and the recipient of the Nobel Prize for Peace in 1971 (1988).

College Assembly

The College Assembly is a dedicated period on most Wednesdays at 10:00 a.m. throughout the academic year. The assembly consists of a series of diverse programs designed to enhance cultural awareness and to provide a forum for discussion of issues of common concern to the College community.



Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text; the reader is referred to the appropriate department.

Accounting

See Department of Business, page 22.

Anthropology

See Department of Sociology and Anthropology, page 65.

Department of Biology

Professors Dively, Heckman, Hoffman
Associate Professors Laughlin (*Chair*), Polanowski

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The department involves students in research studies with professors through senior seminars and independent study projects.

The Biology Department offers two majors:

Bachelor of Science in Biology. The curriculum prepares students for the rigors of graduate school, professional schools of medicine and allied health, and for biologically-oriented employment opportunities.

Bachelor of Science in Environmental Science. The curriculum prepares students for entry-level positions with environmental firms, industry or government agencies which require a knowledge of environmental principles and methodology as well as for entry into graduate environmental programs. In addition to providing the

student with a solid grounding in basic principles, they are exposed to the application of those principles in an intern program.

Biology

The Bachelor of Science: Biological Sciences Concentration prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 411, 412, and three additional courses in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; Mathematics 117 or 121, and 151; and a foreign language through the 112 level or one Computer Science course selected from 115, 120, or 121.

The Bachelor of Science: Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University, or another accredited, pre-approved program. The specific requirements are Biology 111, 112, 201, 202, 202L, and two additional courses in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 117 or 121 and 151; and Computer Science 115, 120, or 121. In addition, all allied health majors should consult closely with Dr. Heckman to insure that the courses being taken are appropriate to fulfill an Elizabethtown College requirement and/or a requirement of the institution to which the student plans to transfer. All allied health students should select Psychology 105 and Sociology 101 to satisfy their Social World core requirement and English 100 or 150 to satisfy their Power of Language core requirement. In addition, physical therapy students must take English 185 or 282; a business, economics, or management elective; and Psychology 221 or 225. Nursing students must take Psychology 225. Occupational therapy students must take both Psychology 221 and 225 and a cultural anthropology course (111 or 202). In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University (three years for Physical Therapy) in Philadelphia (or another accredited, pre-approved program). After completing sufficient credits, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University (or another accredited college or university)

will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, 411, and 412. For further details, contact Dr. Heckman of the Biology Department.

The Bachelor of Science: Secondary Education Concentration prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the biology major (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, one course selected from 321 or 324-324L, and two additional courses in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; one course in Earth Science; Mathematics 117 or 121, and 151; Education 205, 230, 305, 415, and 473. Persons interested in this concentration should consult with Dr. Hoffman.

Environmental Science

Three concentrations are available:

Environmental Toxicology Concentration is for the student interested in investigating the chemical and biological systems which influence the movement of contaminants through biological systems and their effects in the environment. In addition to the universal requirements (below), students are required to take Biology 215, 215L, 317, 324, and 324L. Suggested electives are Chemistry 323 and 324; Political Science 366; Business Administration 330; and either Computer Science 115 or 120.

Environmental Resource Management Concentration is for the student interested in application of ecological theory to the management of terrestrial and aquatic ecosystems. In addition to the universal requirements (below), students are required to take Biology 215, 215L, 317, 324, and 324L; and Earth Science 112 or 215. Suggested electives are Computer Science 115 or 120; Political Science 366; Business Administration 330; and Economics 101.

Environmental Policy Concentration is for the student interested in examining and evaluating current and proposed environmental policies. In addition to the universal requirements (below), students are required to take Business Administration 330; Economics 101; and Political Science 111 and 366. Suggested electives are Computer Science 120; Economics 102; and Political Science 112.

The universal requirements for the Environmental Science major are Biology 111, 112, 313, 313L, 362, 371, 411, 412, and one course from Biology 235, 331, or 347. Other requirements are Chemistry 113, 114, 213, and 214; Mathematics 117 or 121, and 151; Physics 101; and Political Science 361, and 471 or 476.

A Minor in Biology provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 and 112 or 105-105L and 106-106L or 105-105L and 108-108L or 106-106L and 108-108L; 212 or 215-215L; one course from 201, 222, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 18 or 20, depending on course selection. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Hoffman of the Biology Department will work with the student and the student's major advisor.

Cooperative Programs

The Biology Department also offers two programs leading to the receipt of a degree from cooperating institutions.

The Preforestry Program offers a biology concentration in the five year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Laughlin.

Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University, or another degree granting institution with an accredited program, for the junior and senior years.* The student should contact Dr. Heckman very early to design a specific program which meets the requirements of a degree granting institution. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, medical technology, nursing, occupational therapy, and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs. Students who may be interested in receiving an Elizabethtown College degree must complete the biology major and the Elizabethtown College core requirements.

Bachelor of Science in General Science Secondary Education is offered through the Biology Department. The curriculum prepares the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further details may be obtained from Dr. Hoffman.

*Physical Therapy requires two years at Elizabethtown College and three years at Thomas Jefferson University.

105* Principles of Biology

3 credits. **(The Natural World)** Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *Corequisite: (to satisfy Old Core) Biology 105L. May not be taken for credit after completing Biology 111.* Staff.

105L* Principles of Biology Laboratory

1 credit. **(The Natural World)** Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105.* Staff.

106* Genetics, Evolution, and Man

3 credits. **(The Natural World)** Designed for the non-biology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. *Corequisite: Biology 106L.* Spring semester. Staff.

106L* Genetics, Evolution, and Man Laboratory

1 credit. **(The Natural World)** A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106.* Spring semester. Staff.

108* Living With The Environment

4 credits. **(The Natural World)** Designed for the non-biology major, a discussion of the basic principles of environmental relationships and how living organisms play a role in those relationships and respond to changes in their environment. Current problems with pollution, hazardous wastes, energy, and population growth are examined in relation to those environmental principles. *Corequisite: Biology 108L.* Prof. Laughlin.

108L* Living With The Environment Laboratory

1 credit. **(The Natural World)** Includes field trips to a nuclear power plant and water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Corequisite: Biology 108.* Prof. Laughlin.

111* Introduction to Biological Sciences

4 credits. **(The Natural World)** The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses. Hours: lecture 3, laboratory 2. Fall semester. *Cannot be taken for credit without the permission of instructor after completing Biology 105.* Staff.

112 General Biology

4 credits. The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 2. *Prerequisite: Biology 111.* Spring semester. Staff.

201 Human Anatomy

4 credits. A study of human structure at the tissue, organ, and system levels. Particular attention is given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology 111, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology 111, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

206* Biotechnology

3 credits. **(The Natural World)** Historical basic genetic principles will be examined in order to understand the modern manipulation of genetic material by genetic engineering. Emphasis will focus on the presentation of these discoveries to the non-scientist and the impact biotechnology will have on the world. *Prerequisite: Any 100-level Natural World course.*

212 Molecular Biology

3 credits. An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor.* Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit. Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215.* Fall semester. Prof. Heckman.

222 Immunology

3 credits. A basic course encompassing immunity, serology, immunochemistry and immunobiology. Considered are antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology 112 or permission of instructor.* Spring, alternate years. Prof. Polanowski

235 General Microbiology

4 credits. A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 105 or 114, or permission of instructor.* Spring semester. Staff.

311 Biological Instrumentation and Research Methodology

4 credits. A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Staff.

313 General Ecology

3 credits. The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor.* Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313.* Fall semester. Prof. Laughlin.

317 Aquatic Biology

4 credits. The study of physical, chemical, and biological relationships in aquatic ecosystems as they relate to the survival and growth of organisms. The course will include laboratory and field experimentation using

local aquatic ecosystems. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Staff.

321 Plant Physiology

4 credits. A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 105 or 114; or permission of instructor.* Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Prof. Dively.

342 Development and Evolution

3 credits. A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215, 215L.* Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of the instructor.* Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114.* Offered on demand. Staff.

362 Ecotoxicology

4 credits. An overview of contemporary issues in environmental science including the measurement of the ecological effects and fate of pollutants, environmental monitoring to detect ecosystem deterioration, the

emerging discipline of restoration ecology, and related social and economic issues. The course will include laboratory and field experimentation and field trips. *Prerequisites: 15 credit hours of biology and 8 credit hours of chemistry.* Spring semester. Staff.

370-379 Special Topics in Biology

Variable credit. Courses of a specialized nature reflecting the interests of the student and the instructor. Courses offered on a random basis. Staff.

371 Environmental Issues Seminar

1 credit. A multidisciplinary approach to current issues in environmental science. Topics of discussion will include the assessment of environmental risk, the development and implementation of environmental regulations, ecological economics and sustainable resource use, and the emergence of global environmental awareness. Students will be required to write a position paper on an issue of their choice. *Prerequisite: at least junior standing.* Fall semester. Staff.

411-412 Seminar in Biology

0 and 2 credits, respectively. An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311.* Staff.

481-489 Independent Study

Variable credit. Designed to allow the student to do independent research in some phase of biology. *Prerequisites: 16 credits in biology, permission of the instructor and Department Chair.* Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Education 230.* Fall, alternate years. Prof. Hoffman.

Department of Business

Professors Buffenmyer, C. Kreider
Associate Professors Evans, Gliptis, Hoppie, Neyer,
Pomroy, Stone, Trostle (*Chair*)
Assistant Professors S. Dolan (*Associate Chair*), Hill,
Muston

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations. The department's goal is to provide students with an understanding of economic and business systems within the global economy and a multi-cultural society, and to provide them with a foundation for pursuing a career, graduate study, and continuing self-education in a business area.

The Department of Business offers four majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the

increased emphasis upon computer and quantitative techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the Core Program, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrating in one or more of six areas: *accounting, computer science/business information systems, economics, finance, management, or marketing*. A student may also select a secondary area of concentration in *communications or international business*.

Business administration students may also major in forestry and environmental management. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. For further information, see the Evening Session bulletin.

Bachelor of Science in International Business. Preparation for a career in international business requires an understanding of foreign cultures, language and cross-cultural interaction skills, a broad background in business, and skills in a functional area of business. A student must choose one of the following concentrations for the major: *finance, management, or marketing*.

Bachelor of Arts in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 101, Ec 102, Ec 301, Ec 302, and two additional economics courses. In consultation with the department advisor, the elective courses should be tailored to the student's area of interest.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 101, BA 265, BA 330, and four other courses offered in the Department of Business. The elective courses should be selected after consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Students interested in business and technology are advised to read the description of the Industrial Engineering major offered by the Department of Physics.

Accounting

A major in accounting includes Accounting 105, 106 (Ac 107-108 may be substituted), 205, 206, 207, 301, 305, 9 additional semester hours in accounting; Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120/MS-DOS; Economics 101, 102; Mathematics 151. No more than 75 credits may be taken in courses offered by the Department of Business.

Business Administration

A major in business administration includes Accounting 107, 108, (Ac 105-106 may be substituted); Business Administration 215, 248, 265, 325, 330, 355, 495; Computer Science 120/MS-DOS; Economics 101, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve semester hours beyond those listed above must be taken in the concentration area (Nine of those twelve hours must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration. No more than 75 credits may be taken in courses offered by the Department of Business.

For an *Accounting Concentration*, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A *Computer Science/Business Information Systems Concentration* requires Computer Science 121, 135, 335, 340. An *Economics Concentration* requires Economics 301, 302, and two other economics courses from the departmental advising sheet. A *Finance Concentration* requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The *Management Concentration* requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 319, 416, and two other marketing courses from the departmental advising sheet.

A *Secondary Concentration in International Business* requires competency in a modern language at the 112 level; Anthropology 111 or Business Administration 251; Political Science 245; Economics 307 or 311 or 312; and two other courses from the departmental advising sheet. A *Secondary Concentration in Communications* requires Communications 105, English 185, and three other courses from the departmental advising sheet.

International Business

A major in international business must complete the requirements for the four components of the program: Modern Languages, Foreign Culture and International Interaction, Business Studies, and Experiential Learning.

Requirements for the Modern Language component include 211, 212 of a modern language and a minimum rating of Intermediate High/1+ on the ACTFL scale. Requirements for the Foreign Culture and International Interaction component include Political Science 245, 341; Economics 100, 307; Business Administration 251, 337; and two other foreign culture and international interaction courses from the departmental advising sheet. Requirements for the Business Studies component include Accounting 107, 108; Computer Science 120; Economics 102; Mathematics 151; Business Administration 215, 265, 325, 497; and nine semester hours in one of the concentrations listed below.

For a *Finance Concentration*, a student must take Business Administration 327, 425, and one other finance course from the departmental advising sheet. A *Management Concentration* requires Business Administration 369, 367, and one other management course from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 317, 319, and one other marketing course from the departmental advising sheet.

In order to meet the requirements of the Experiential Learning component, a student must study abroad for at least one semester with our BCA program or with another program approved by the Department of Business and the Office of Registration and Records.

Economics

A major in economics includes Economics 101, 102, 301, 302, 309, and 15 additional semester hours in economics: Computer Science 120, Mathematics 121, 151, and 252; nine semester hours of history; and nine semester hours of political science and/or sociology.

Accounting

Students who complete Accounting 105 may not enroll in Accounting 107 or 108 unless the faculty specifically allows them to do so. Likewise, students who complete 107 may not enroll in 105 or 106. The proper course sequence is either 105-106, or 107-108.

105 Principles of Accounting I

3 credits. An introductory course for students who intend to continue in accounting. The accounting cycle and financial statements of the proprietorship. Fall semester. Prof. Pomroy.

106 Principles of Accounting II

3 credits. A continuation of 105. Partnerships, Corporations, ratios, and introduction to cost accounting. *Prerequisite:* Accounting 105. Spring Semester. Prof. Pomroy.

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Profs. S. Dolan, Neyer.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite:* Accounting 107. Profs. S. Dolan, Neyer.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite:* Accounting 106 or permission of the instructor. Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite:* Accounting 205. Spring semester. Prof. Neyer.

207 Intermediate Accounting III

3 credits. A continuation of the study of theories and concepts used in the preparation of general purpose financial statements on a special topics basis. This course will concentrate on earnings per share, accounting for income taxes, leases, income presentation, and other topics of a specialized nature. *Prerequisite:* Accounting 206. Fall semester. Prof. Pomroy.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites:* Accounting 301, 206 or permission of the instructor. Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite:* Accounting 106 or 108; or permission of the instructor. Fall semester. Prof. Neyer.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite:* Accounting 305. Spring semester. Prof. Neyer.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite:* Accounting 106 or 108. Spring semester. Prof. Neyer.

371-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite:* Accounting 206. Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite:* Accounting 206. Fall semester. Staff.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites:* Accounting 302, 405, 406; or permission of the

instructor. Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite:* *approval of the department chair.* Prof. Pomroy.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites:* *approval of the department chair and the Provost.*

Business Administration

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. Staff.

248 Quantitative Techniques for Business

3 credits. Statistical and mathematical methods applicable to business: includes Bernoulli and Bayesian probability, decision theory, inventory models, linear programming, queuing theory, and network models. *Prerequisite:* *Mathematics 151.* Profs. Beyerlein, Stone, Trostle.

251* Cross Cultural Understanding

3 credits. **(Foreign Cultures and International Studies)** An interdisciplinary study of the political, social, and economic environment of foreign cultures. Focuses on understanding the differences between foreign cultures and our own culture and on developing the interaction necessary to function effectively in the global community. Prof. Buffenmyer.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Profs. Buffenmyer, Muston, Stone.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites:* *Business Administration 215 Mathematics 151.* Spring semester. Staff.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisites:* *Business Administration 215 and 319.* Fall semester. Staff.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends. *Prerequisites:* *Business Administration 215, 265.* Fall semester. Staff.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite:* *Business Administration 215.* Spring semester.

319 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during, and after, a purchase. Emphasis is on understanding and predicting the individuals consumption patterns so that effective

marketing strategies can be developed. *Prerequisite:* *Psychology 105.* Fall semester. Staff.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite:* *Accounting 106 or 108.* Prof. Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite:* *Business Administration 325.* Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite:* *Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite:* *permission of the instructor.* Spring semester. Prof. Gliptis.

337 International Legal Environment

3 credits. An introduction to important laws, issues, and policies pertinent to the international environment of business. This course examines legal principles and regulations at the national and international level. Offered first time, Fall 1995. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques for management and business. Emphasis on analysis and writing and presentation; and the organization of materials for effective oral and written presentations. Prof. C. Kreider.

367 International Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite:* *Business Administration 265.* Prof. Buffenmyer.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisites:* *Psychology 105, Business Administration 265.* Fall semester. Prof. Muston.

371-379 Special Topics

3 credits. Topics and problems of current relevance in business.

374 Organizational Marketing

3 credits. An examination of the marketing of goods and services between businesses, institutions, and government with special emphasis on organizational buying, behavior, relationship management and promotional tools necessary to reach organizational customers. Staff.

416 Marketing Management

3 credits. Integrating marketing theories and concepts for strategic planning and implementation. Case method emphasized. *Prerequisites:* *Business Administration 215, 248, 265, and 319.* Spring semester. Staff.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite:* *Business Administration 325.* Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite:* *Business Administration 325.* Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of decision-making techniques, emphasizing the practical application of scientific methods to production activities. Topics include resource allocation, production cycle, work simplification, plant layout, and process control. *Prerequisites:* *Business Administration 248, 369; Economics 102.* Spring semester. Prof. Stone.

467 Human Resource Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite:* *Business Administration 265.* Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite:* *Business Administration 369 or permission of the instructor.* Fall semester. Prof. Muston.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite:* *approval of department chair.* Prof. Buffenmyer.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites:* *approval of the department chair and the Provost.*

495 Business Policy

3 credits. A capstone course for the business major, integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisite:* *senior status.* Prof. Muston.

497 International Strategic Management Seminar

3 credits. A capstone course for the international business major, integrating concepts, principles, and practices from prior courses. Course will require group decision making and presentation, participation in a global computer simulation, and a major written comprehensive case analysis. *Prerequisite:* *senior status in international business major or permission of instructor. (Students who have successfully completed Business Administration 495 cannot take this course for credit.)* Offered first time, Spring 1996.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites:* *Business Administration 215, 311, and two other courses required for the marketing concentration, or permission of instructor.* Staff.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites:* *Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor.* Profs. Buffenmyer, Muston.

Economics

100 Global Economics: Principles and Issues

3 credits. Global economics is a principles course designed to introduce students to the essential concepts of basic economics but with a strong emphasis on the global environment. Traditional topics of economic analysis, economic policy, and evaluation will be covered. In addition, each particular issue will be supplemented with an international trade or global economic example in order to help students appreciate the international dimension of the subject of economics. *(Students who have completed Economics 101 cannot take this course for credit.)* Fall semester. Prof. Evans.

101 Principles of Macroeconomics

3 credits. The principles and problems of economics. Topics include supply and demand, the United States economic system, national income accounting, employment theory, fiscal policy, money and banking, and monetary policy. *(Does not fulfill Core requirement for students majoring in the business department. Students who have successfully completed Economics 100 cannot take this course for credit.)* Profs. Evans, Hoppie, Stone.

102 Principles of Microeconomics

3 credits. Topics include elasticity, consumer behavior, production costs, market structures (competition, oligopoly, monopoly), and resource pricing. *(Does not fulfill Core requirement for students majoring in the business department.)* Profs. Evans, Hoppie.

203* The Greatest Economic Mystery Series

3 credits. **(Social World)** Through a series of four mystery novels, the authors weave important lessons of economics into an entertaining story of intrigue and deception. This combination of ingenious story line and important issues of macroeconomics and public affairs should provide a truly different experience for all students. Prof. Evans.

301 Intermediate Microeconomic Theory

3 credits. An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites:* *Economics 101, 102; Mathematics 117 or 121.* Fall semester, even-numbered years. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites:* *Economics 101, 102; Mathematics 117 or 121.* Spring semester, even-numbered years. Prof. Hoppie.

303 Money and Banking

3 credits. A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisite:* *Economics 101 or permission of the instructor.* Spring semester. Prof. Evans.

304 Public Finance

3 credits. An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisite:* *Economics 102.* Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Offered on demand. Prof. Hoppie.

307 International Economics

3 credits. The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy, and practice. *Prerequisite: Economics 100 or 101.* Offered on demand. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite: Economics 100 or 101.* Offered on demand. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites: Economics 101, 102; Mathematics 117 or 121.* Offered on demand. Prof. Evans.

311 Economic Development

3 credits. Examination and substantive analysis of the issues, problems, policies, and theoretical underpinnings of economic development in the Third World countries, including newly industrialized countries. The central thesis is growth, modernization and change with particular emphasis on area and country studies. Offered on demand. Prof. Hoppie.

312 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Offered on demand. Prof. Hoppie.

371-379 Special Topics

3 credits. Topics and problems of current relevance in economics.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of economics. *Prerequisites: approval of the department chair and the Provost.*

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite: permission of the instructor.* Fall semester. Odd numbered years. Prof. Gliptis.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology Program*), Ranck, Schaeffer
Associate Professor Reeder (Chair)
Assistant Professor Lowe-Krentz

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the pragmatic mixture of studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their Core Program requirements, as an elective, as a minor area of study, or as a major area of study leading to a career which requires an in-depth knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations, and minors in chemistry and biochemistry.

The bachelor of Science in biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Premedical and other health professions programs are discussed on p. 66.

The bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum, the medical technology curriculum, and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (100 semester hours) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, N. J.), York Hospital, Lancaster General Hospital, Abington Hospital and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the degree is granted. It is the student's responsibility to keep the Registrar's office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with the Registrar in January of the year of the clinical work.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's advisor and the department chair. Students planning much work in chemistry should consult with a departmental advisor as early as possible to plan the sequence of courses in chemistry, mathematics, physics, and biology, which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to ensure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-2, 461-2, and four credits from among 451, 491, 492, or 496; Biology 111, 112, 324, 324L; 6 additional hours of biology and 3 hours of biology or chemistry; Computer Science 115; Mathematics 122; and Physics 102.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 353, 343, 344, 352, 361-2, 402, 421, 461-2, and four credits from among 451, 491, 492, or 496; Computer Science 115; Mathematics 222; and Physics 102.

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; Biology 111, 112, 222, and 235, and electives to total a minimum of 16 semester hours; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus Core Program and electives must total 96 semester hours. The clinical year includes a minimum of 29 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, and four credits from among 451, 491, 492, or 496; Mathematics 122; Physics 102; and two additional courses in biology or chemistry.

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 353, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; and Education 205, 230, 305, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see page 70.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 353, 361-2, 461-2, and one additional chemistry course; Computer Science 115; Mathematics 222; Physics 102; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 101, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 352, 353, 361-2, 461-2, and at least four credits from 451, 491, 492, or 496; Computer Science 115; Mathematics 222; Physics 202; and a minimum of three courses from the following: Chemistry 402, 421, and two credits from 491, 492, or 496; Mathematics 362; or any 300-400 level Physics courses.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of advanced chemistry as approved by the department faculty.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

101* General Chemistry: Practical Principles

4 credits. **(The Natural World)** An introduction to the study of the material world from a phenomenological, measurable, and observable viewpoint. Topics include elements and compounds, weight relationships, states of matter, solutions, descriptive reactivity, reaction energetics, solution equilibria, and organic and biochemical structure and nomenclature. Hours: lecture 3, laboratory 3. *Prerequisites:* high school algebra. Fall, spring semesters. Profs. Reeder, Schaeffer.

105* General Chemistry: Theoretical Principles

4 credits. **(The Natural World)** An introduction to the study of the material world from a conceptual, model building viewpoint. Topics include elements and compounds, atomic composition and electronic structure, bonding and molecular structure, physical properties, thermodynamics, and reaction kinetics. Hours: lecture 3, laboratory 3. *Prerequisites:* high school algebra. Spring semester. Prof. Schaeffer.

113* Organic Chemistry I

4 credits. **(The Natural World)** The first course for those students who plan to take more than one year of chemistry. Topics include formulas, stoichiometry, bonding, geometry, equilibrium, reactivity, kinetics, and instrumentation applied to carbon compounds. The importance of organic compounds across disciplines and in everyday life will be emphasized. Hours: lecture 2, discussion 1, laboratory 3. *Prerequisites:* high school chemistry and algebra or equivalent. Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite:* Chemistry 113. Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or corequisite:* Chemistry 114; permission of instructor. Spring semester. Prof. Proctor.

213 Analytical Chemistry I

4 credits. Quantitative analysis emphasizing classical inorganic, gravimetric, and volumetric methods. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 114 or equivalent. Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. A continuation of Chemistry 213, with added emphasis on instrumental methods and computer applications. Hours: lecture 2, laboratory 6. *Prerequisite: Chemistry 213 or equivalent.* Spring semester. Prof. Hedrick.

242 Physical Inorganic Chemistry

3 credits. Thermodynamic stability and bonding in ionic and covalent inorganic substances. Inorganic reactivity in acid-base and oxidation-reduction systems. Some descriptive chemistry of main group and transition metal elements. *Prerequisites or corequisites: Chemistry 214, Mathematics 122, Physics 102.* Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites: Chemistry 213 and Biology 112 or equivalent.* Fall semester. Prof. Lowe-Krentz.

324 Biochemistry II

3 credits. A continuation of Chemistry 323. *Prerequisite: Chemistry 323.* Spring semester. Prof. Lowe-Krentz.

326 Techniques of Biochemistry I

1 credit. Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite: Chemistry 323.* Fall semester. Prof. Lowe-Krentz.

327 Techniques of Biochemistry II

1 credit. A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite: Chemistry 326; corequisite: Chemistry 324.* Spring semester. Prof. Lowe-Krentz.

343 Atomic Structure (Physics 221)

3 credits. Twentieth-century developments in the structure of the atom. Topics include X-rays, radioactivity, atomic spectra, blackbody radiation, introduction to quantum theory emphasizing the extranuclear structure of the atom, elementary particles, nuclear structure, and transformations. This course is the same as Physics 221. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite: Chemistry 343.* Spring semester. Prof. Ranck.

352 Advanced Chemistry Laboratory II

3 credits. Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite: Chemistry 344.* Spring semester. Prof. Ranck.

353 Advanced Chemistry Laboratory I (Physics 353)

4 credits. Experimentation, data acquisition, data analysis, and technical presentations appropriate for the physical and chemical sciences. Emphasis on statistics of physical/chemical experimental data and computer methods of analysis, including electronic laboratory notebooks and computer networks. Hours: lecture 2, laboratory 6. *Prerequisites: Computer Science 115, Mathematics 121, and Physics 102.* Fall semester. Prof. Ranck.

361, 362 Chemistry Seminar I, II

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 362. Hours: seminar 1 (Fall), seminar 1 (Spring). Prof. Schaeffer.

371-379 Special Topics in Chemistry

Variable credit. Study of an advanced topic, experimental or theoretical,

of interest to the student. *Prerequisites: permission of instructor and department chair.* Staff.

402 Advanced Inorganic Chemistry

3 credits. A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite: Chemistry 344.* Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite: Chemistry 344.* Fall semester. Prof. Spangler.

451 Advanced Chemistry Laboratory III

4 credits. Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite: Chemistry 242.* Fall semester. Prof. Schaeffer.

461, 462 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 462. Hours: seminar 1 (Fall); seminar 1 (Spring). Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control. *Clinical Chemistry*—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

491-492 Research in Chemistry

Variable credit. An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor.* Staff.

496 Independent Problems in Chemistry

Variable credit. An independent experimental or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor.* Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Education 230.*

Department of Communications

Professor Moore (*Chair*)

Associate Professors Shaner, Smith, Wennberg

Instructor Dye, Thomson

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WWEC-FM, and the 24-hour local access cable television production facility, ECTV-Channel 40, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WWEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, Honorary Journalism Fraternity, International Association of Business Communicators (Elizabethtown College chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 41 credit hours required for a Bachelor of Arts degree with a *communications major* include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 225, 235, 248, 485; Computer Science 120 (Introduction to Computer Processing for the Macintosh), and 12 credit hours in a concentration. All majors are strongly encouraged to complete a minor area of study chosen in consultation with their advisor. Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of career interest. The minor allows for complementary

preparation in another discipline. Prior to preregistration for the junior year, the student must elect a communications concentration which requires 12 credit hours. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student as a designer, producer, and a manager of a variety of internal/external media programs and facilities for business, industry, and other institutions. The student is required to complete Communications 215, 348, and two electives to be chosen from Communications 336, 371, 424, and 471.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are Communications 311, 351, 412, and one elective to be chosen from the following: Communications 215, 314, 316, and 348.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcast and print journalism. Required are Communications 311, 314 or 316, and two electives to be chosen from the following: Communications 215, 314, 316, 321, 336, 348, 422, and 424.

A minor in communications is offered to students majoring in other departments. The minor permits a student to reach a level of competency in written, spoken, and visual communications to complement their primary area of preparation. The 25 credit hours required for a minor in communications include Communications 109, 115, 125, 205 (repeated for two semesters), 225; Computer Science 120 (Introduction to Computer Processing for the Macintosh); and 9 credit hours of approved departmental electives at or above the 200 level.

No more than 57 credits in Communications may be counted toward graduation.

Admission Requirements for Communications Majors and Minors

All students must have a 2.0 GPA to declare the major or minor and enroll in any courses above the 100 level.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a practical way, understandings and abilities in a career-related position.

Practica often occur during or after the junior year and are available for no more than three semester credits with on campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the

internship option requires an overall 2.70 GPA and a 3.0 GPA in the major.

Practica are not repeatable and may count as elective credit within the major. Internship credits count only as general elective credit.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 150 opportunities already negotiated with regional communications organizations.

The department has also become affiliated with other major institutions and organizations to assist in providing internship experiences in major urban areas. These affiliations include the Washington Center for Politics and Journalism, the American University Washington Semester Program, the Boston University Washington Internship Program, the Washington Center for Internships and Academic Seminars (through the Political Science department), and the Intern Placement Service (in New York City and throughout New Jersey).

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the College.

105* Fundamentals of Speech

3 credits. **(Power of Language)** An examination of the structures, functions, political, social, and economic impacts of the mass media in the U.S. A goal is to help students become more critical and analytical consumers of the mass media. *Available only to students with English 150 placement level, if course is to be used for Power of Language requirement.* Profs. Dye, Moore.

109 Communications Theory

3 credits. Students explore and examine the processes of human communication as related to various aspects of human experience. Focus is on several levels, individual, interpersonal, and mass, examining such aspects as speech production, sender/receiver relationships, listening, nonverbal communication and the use of symbols. Students explore mass media from a human communication perspective. Prof. Ellis.

115* Media and Society

3 credits. **(The Social World)** An examination of the structures, functions, political, social, and economic impacts of mass media in the U.S. A goal is to help make students critical and analytical consumers of

the mass media. Profs. Sevareid, Thomson.

125 Introduction to Media Production

3 credits. The course provides the design, theory and development of production skills and techniques for a variety of audio-visual materials, photography, and print materials. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials, including a multi-image presentation. *Pre/corequisite Computer Science 120.* Prof. Wennberg.

205 A—D Applied Communications

.5 credit. Four semesters of participation in approved cocurricular activities is required of all majors. All participants must meet the standards of the activity in order to count toward meeting the requirement. Of the four semesters of participation, three must be in different, approved activities. These include: a. WWEC-FM, b. Forensics, c. *Etowanian* and *Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any two activities. A communications major or minor may enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. *Graded Pass/Fail.* Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisites: Communications 105 or 109.* Profs. Dye, Sevareid, Smith.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of desktop publishing are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 (for the Macintosh).* Profs. Shaner, Wennberg.

225 Audio: Theory and Practice

3 credits. The technical and aesthetic fundamentals of audio field and studio production. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic audio projects. A general overview of the history of radio is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video: Theory and Practice

3 credits. The technical and aesthetic fundamentals of video field and studio production and postproduction. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic video projects. A general overview of the history of broadcast television is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 225.* Prof. Thomson.

245* Communication Analysis and Culture

3 credits. **(Cultural Heritage)** A critical exploration of rhetorical theories from the ancient period to the modern which focus primarily on the spoken word. The validity and impact of these communication theories will be analyzed within the bounds of current thought and in context of the theory's contemporary beliefs. Spring Semester. Prof. Dye.

248 Communication Law and Ethics

3 credits. An examination of the law of the field of communications as well as its history and effects. Current ethical issues are explored through case studies. *Prerequisite: Communications 115 or permission of instructor.* Prof. Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. Spring semester, odd numbered years. Prof. Dye.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. Spring semester, even numbered years. Prof. Dye.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of the instructor.* Prof. Shaner.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: For majors: Communications 311 or permission of the instructor. For Professional Writing students: two Professional Writing courses and permission of the instructor.* Spring semester, odd numbered years. Prof. Shaner.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, editing copy, continuity, and news for radio and television. *Prerequisite: Communications 225, 235, 311, or permission of instructor.* Spring semester. Prof. Smith.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites: Communications 225 and 235.* Fall semester, even numbered years. Prof. Smith.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites: Communications 235, 205-ECTV (may be a corequisite).* Spring semester. Prof. Thomson.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisites: Communications 125, 225, and 235, or permission of instructor.* Fall semester. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite: Communications 311 or permission of instructor.* Fall semester. Prof. Shaner.

371-379 Special Topics

Variable credit. Periodic offerings of the Department or directed study in topics of special interest to advanced majors. Staff.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. Periodic offering. Prof. Moore.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite: Communications 351.* Spring semester. Prof. Shaner.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisites: Communications 225, 235, 248.* Fall semester, odd numbered years. Prof. Severeid.

424 Script and Screenwriting

3 credits. The course emphasis will be placed on identifying the tools used in successful, creative writing, and then putting them into practice. The student will become familiar with, through study and practical application, the various visual/audio formats used in dramatic radio, television, and film scripting and writing. Spring semester. Prof. Severeid.

471-479 Practicum and Internship

Variable credit. Instruction on an individual basis for credit from the communications faculty or other qualified professionals in the student's chosen communications concentration: Corporate Media, Public Relations, Mass Communication. *Prerequisites: Practicum—at least junior standing; is taken with a campus-based sponsor for elective credit in the major; may not be repeated. Internship—senior standing, at least 12 credits, a 2.70 cumulative GPA and a 3.0 GPA in the major; Must be taken full-time for an entire semester off campus, and used only as free elective.* Prof. Moore.

480-489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites: at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite: senior standing.* Profs. Moore, Wennberg.

Department of Computer Science

Professor C. Kreider

Associate Professors Leap, Tulley (*Chair*)

Assistant Professor Bina

Lecturer Evans

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *three majors*—one in *computer science*, one in *computer science/business information systems*, and another in *computer engineering*, which is offered in conjunction with the Department of Physics. All three majors provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 4000 cluster is used primarily for administrative purposes. The VAX 3100 is dedicated to academic use.

The College also has available for student use a variety of micro and personal computers. These include Apple, IBM, and Epson computers. Interconnection between the computers is provided.

The computer science department maintains an Intel 80486/33 based multiuser timesharing computer system running the UNIX operating system. This system is housed in the department's computing laboratory along with a number of other 80386 and 80286 based PC's. All

departmental computers are connected to a local area network (LAN) based on ethernet technology. The department also maintains a computer interfacing and electronics design laboratory.

The department strongly recommends that students purchase their own MS DOS-based personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase IBM PC's at excellent prices. Students can also build their own personal computer as part of several computer science courses.

Major software systems available on the computers include most major computer languages (Actor, Ada, BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, Dbase III+, Lotus 1-2-3, and WordPerfect); and relational data base management systems.

All computer science majors and students enrolled in courses requiring use of the VAX computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 hours of computer science courses.

The computer science major is required to take Computer Science 121, 122, 221, 222, 321, 322, 332, 341, 421 or 422, and 490, plus nine credits of computer science electives; Mathematics 121, 122, and 201; and a minor in another discipline.

The computer science/business information systems major is required to take Computer Science 121, 122, 135, 221, 222, 332, 335, 341, 409, 490, and nine credits of computer science electives; Mathematics 117, 151; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 101, 102.

The three Computer Science electives required of the computer science major and the computer science/business information systems major may include either CS 120 or CS 130, but not both.

The computer engineering major requirements are specified under the Department of Physics.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of an appropriate programming language, data representation, file handling, and the use of subprograms. (*Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor.*) Prof. Reeder.

120 Introduction to Microcomputer Applications

3 credits. An overview of computer concepts, uses, and issues. The personal computer operating system and several software packages (database, desktop publishing, spreadsheet, and word processing) are a major component. Staff.

121* Computer Science I

1 or 3 credits. (**Mathematical Analysis**) The fundamental concepts of computer organization, machine level representation of data, algorithmic development and structured programming are presented with an emphasis on the syntactic and execution characteristics of a structured programming language (currently Pascal) including data types; arithmetic operators and assignment; input/output, selection and iteration structures; elementary data structures; and procedural abstraction. *Prerequisites: high school algebra and/or trigonometry.* (Students who have successfully completed Computer Science 115 will receive one credit for this course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis, recursion, internal sort and search methods, string processing, fixed and variant record structures, and file handling using a second programming language (currently C) and the UNIX operating system. *Prerequisite: Computer Science 121.* Staff.

130 Microcomputer Architecture

3 credits. The operation of the microcomputer, the physical characteristics of its architecture, and the implementation of software are discussed. The course explores the UNIX, Macintosh, and IBM operating environments. Topics covered include computer ethics, hardware components such as memory registers, central processor types, controllers, peripherals such as disk drives and tape drives, ASCII code implementation, input/output architecture and devices, memory management, networking, and multimedia. Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Fall semester. Staff.

221 Algorithms and Data Structures

3 credits. The design of algorithms for handling abstract data types including stacks, queues, linked lists and trees is coupled with an introduction to complexity analysis, storage allocation and its management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. Fall semester.

322 Formal Languages

3 credits. A discussion of grammar classifications as a formal description for programming language syntax, finite state machines as acceptors of regular expressions, and the equivalence of push-down automata and context-free grammars and their use in parsing programming languages. *Prerequisites: Computer Science 221, 321.* Spring semester. Prof. Tulley.

332 Computer Organization and Architecture

3 credits. Introduction to Boolean algebra, design of combinational and sequential circuits, and their use in von Neumann computer architecture. Basic parts of computer systems including memory, control and input-

output systems are studied. The student is expected to design a simple micro-programmed computer. *Prerequisite: Computer Science 222.* Fall semester. Prof. Bina.

333 Computer Systems Interfacing (Physics 242)

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. *Prerequisite: Computer Science 122.* Spring semester, odd numbered years. Prof. Leap.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite: Computer Science 135.* Spring semester. Prof. Leap.

340 Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, software applications, and information; and an investigation of information systems of the various functional areas within the organization. *Prerequisites: Computer Science 120 or 121; Business Administration 215, 265.* Spring semester. Prof. Kreider.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisite: Computer Science 122 or 135.* Fall semester, odd numbered years. Prof. Evans.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites: Computer Science 221; Mathematics 151; or permission of instructor.* Prof. Tulley.

361 Computer Graphics

3 credits. Overview of the principles of computer graphics including the basis of raster and vector display devices; representation of lines, and curves, two- and three-dimensional scaling; hidden lines and surfaces; and animation techniques involving interactive graphics and the user interface. *Prerequisites: Computer Science 221 and Mathematics 201.* Prof. Bina.

362 Comparison of Programming Languages

3 credits. Comparative study of programming language concepts including data objects and data types, scope, procedures, abstraction mechanisms, sequence control, exception handling and concurrency, providing a framework for understanding language design. Intended to provide the necessary tools for critically evaluating existing and future languages and language constructs. *Prerequisite: Computer Science 221.* Prof. Tulley.

371-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite: permission of instructor.* Staff.

409 Data Base and Information Systems

3 credits. A study of database design and management techniques. Topics include data models (E-R, relational); query languages; data dictionary; implementation of a relational database kernel; file security; and various database implementations (hierarchical, network, relational). *Prerequisites: Computer Science 221 and 341 or permission of instructor.*

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers, interpreters, and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construction of a working systems program will be assigned. *Prerequisites:* Computer Science 222, and either Computer Science 322 or permission of the instructor. Fall semester, odd numbered years. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, device drivers, and interrupt handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites:* Computer Science 332. Spring semester, even numbered years. Prof. Bina.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite:* approval of the computer science faculty. Prof. Tulley.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite:* approval of the computer science faculty and Provost. Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal with a final report and defense of work. *Prerequisites:* senior status or permission of instructor. Spring semester. Staff.

Earth Science

See Department of Physics, page 56.

Department of Education

Professor Rice

Associate Professors Bartoli, Boothby, Fox

Assistant Professors Bauman, Blue (*Chair*), Toro

Bachelor of Science

The department offers major programs in Early Childhood (N-3) and Elementary Education (K-6) which combine a strong liberal arts education with the development of high professional competence. Supported by the Core Program, the student's minor, and elective coursework, these major programs bring together in a creative way the student, the school, and the subject to be taught. Further, the department stresses the importance of supervised field experiences which complement on-campus courses in education. A dual major in Early Childhood and Elementary Education is also available.

Bachelor of Arts or Bachelor of Science

Programs in Secondary Education are available in selected academic areas (English, Mathematics, Biology, Chemistry, Physics, General Science, and Social Studies). Carefully designed work in the academic or interdisciplinary major, the Core Program, and electives, qualifies students for the degree appropriate to that major. A program in Music Education (K-12) is also available (see the Department of Fine and Performing Arts).

Certification

The department and the College act as agents of the Commonwealth in the teacher certification process for those meeting the standards detailed below.

General Requirements of the Programs

Admission to the Programs

1. Make written application to the Department of Education after:
 - a) Completion of a minimum of 30 credit hours with a cumulative G.P.A. of 2.5 or higher
 - b) Completion of Education 205 and 245 (Elementary Education, Early Childhood Education, or dual Elementary and Early Childhood Education) with a minimum grade of C (2.0) in each.
2. Submit a TB medical clearance
3. Provide a record of Act 34 clearance
4. Declare a college approved minor (for Early Childhood and Elementary Education majors)
5. Receive approval of the Department of Education and the major department(s)
6. Present a portfolio demonstrating interest and/or experience in professional education (may include: above items, letters of recommendation, descriptions of experience, written essay, etc.)

Progress in the Programs

1. Receive no grade lower than C- in any course required in the program
2. Receive passing scores on the General Knowledge and Communication Skills tests of the Core Battery of the NTE
3. Maintain a portfolio demonstrating interest and experience in professional education
4. If a cumulative G.P.A. of 2.5 is not maintained, students are not permitted to enroll for additional Education courses until the cumulative G.P.A. is 2.5 or higher.

Note: Students are evaluated at the conclusion of each semester and may be advised to withdraw at any time the department determines such action to be appropriate.

Exit from the Programs

1. For the major only (no certification):
 - a) Complete all requirements of the major, except the professional internship, with a cumulative G.P.A. of 2.0 or higher
 - b) Complete a College approved minor (Elementary Education, Early Childhood Education, or dual

Elementary Education and Early Childhood Education majors only)

- c) Complete an alternative internship experience of at least 6 credits, approved by the Department of Education
2. For the major and certification:
- a) Complete all requirements of the program with a G.P.A. of 2.5 or higher
 - b) Earn a grade of P in the professional internship
 - c) Complete a College approved minor (Elementary Education, Early Childhood Education, or dual Elementary Education and Early Childhood Education majors only)
 - d) Receive passing scores on the Professional Knowledge test of the Core Battery and on the Specialty Area test of the NTE
 - e) Receive approval of the Department of Education and the major department(s)
 - f) Present a portfolio summarizing one's activities and experiences in professional education (may include: evaluations, sample lessons or units, resume, references, videotape(s), etc.)
 - g) Show evidence of a valid TB and Act 34 clearance
 - h) Complete application for certification

Special Requirements of the Programs

Students in the *Elementary Education Program* must complete Education 205, 245, 250, 265, 325, 335, 345, 355, 365, 385, and 472; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 471; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Dual Elementary and Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 474; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Secondary Education Program* must complete an academic or interdisciplinary major as outlined by an area which supports a certification program; complete Education 205, 230, 305, 306, (for English Education only) 415, and 473; and satisfactorily complete all other program requirements.

250 Foundations of Education

3 credits. A study of the historical, philosophical, sociological, and political foundations of education. Emphasis is on critical understanding of educational thought and practice in order to identify, interpret, and search for resolution of educational controversies and problems.

230 Analysis of Instruction

4 credits. A study of factors underlying and supporting the teaching and learning process. Topics include: human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, social learning, instructional design and management, and media and technology. Field experience required. *Prerequisite: Education 205.*

245 Teaching and Learning Processes

3 credits. A study of factors underlying teaching and learning processes, including human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, and context-specific analysis. Requires field experience.

250 Foundations of Literacy

3 credits. A study of emergent literacy and strategies for teaching beginning reading in an integrated language arts curriculum. Includes an introduction to children's literature. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 265.*

265 Instructional Media and Technology

3 credits. A study of instructional media and basic media design stressing planning, producing and applying instructional media. This course includes evaluation and use of commercial software, data bases, desktop publishing, simulations and problem solving for elementary certification candidates. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 250.*

305 Methods of Secondary Education

4 credits. A study of the instructional methodology of an academic discipline under the guidance of a clinical professor in the academic major. Field experience required. *Prerequisite: Education 230.*

315 Early Childhood Education

3 credits. A study of programs for young children with regard to theoretical base, curricular goals, teacher role, physical environment, and program sponsorship. Requires field experience. *Prerequisites: Education 250 and 265.*

320 Special Methods in Early Childhood Education

3 credits. A study of developmentally appropriate procedures and materials for the preschool child, emphasizing the importance of play in Early Childhood programs. Requires field experience. *Prerequisites: Education 250 and 265.*

325 Science and Health in the Elementary School

3 credits. A study of science processes in an elementary school program; the utilization of multiple resources, organization, management, evaluation, instructional strategies, and integration of science and health in the elementary school program. *Prerequisites: Education 250 and 265. Corequisites: Education 335, 345, 355, 365, and 385.*

335 Mathematics in the Elementary School

3 credits. A study of how children develop a background of understanding and skill in mathematics, concentrating on the development of problem solving, reasoning, and communication skills in mathematics, and connecting mathematics and the real world. Additional focus will be on organization for instruction, alternative means of evaluation, teaching special needs and at-risk students. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 345, 355, 365, and 385.*

345 Reading and the Integrated Curriculum

3 credits. A study of the processes of learning to read and think critically about texts across the K-6 curriculum. The approach of the course is literature-based and student centered, and it includes both creating and evaluating an integrated curriculum for strategic meaning-making. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 355, 365, and 385.*

355 Writing and the Integrated Curriculum

3 credits. A study of writing instruction and its integration across the elementary school curriculum. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 345, 365, and 385.*

365 Social Studies for Elementary Education

3 credits. A study of content, teaching strategies, materials, organizing approaches, and curricula for teaching social studies in the elementary school. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, and 385.

371-379 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite:* permission of instructor.

385 Elementary Education Practicum

1 credit. Supervised field placement. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, and 365.

415 Reading in the Content Area

2 credits. A study of the theory and practice of secondary education with an emphasis on developmental reading and reading in the content area. *Prerequisite:* Education 305. *Corequisite:* Education 473.

471 Professional Internship

16 credits. Student teaching for seven weeks in a pre-K setting and for seven weeks on a K-3 setting. *Prerequisites:* Education 315, 320, 325, 335, 345, 355, 365, 385, and cumulative G.P.A. of 2.50 or higher.

472 Professional Internship

16 credits. Student teaching at the K-6 level. *Prerequisites:* Education 325, 335, 345, 355, 365, 385, and cumulative G.P.A. of 2.50 or higher.

473 Professional Internship

14 credits. Student teaching at the 7-12 level. *Prerequisite:* Education 305 and cumulative G.P.A. of 2.50 or higher. *Corequisite:* Education 415.

474 Professional Internship

17 credits. Student teaching for a minimum of ten weeks in a K-6 setting and for six weeks in a pre-K setting. *Prerequisites:* Education 315, 320, 325, 335, 345, 355, 365, 385, and cumulative G.P.A. of 2.50 or higher.

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

Engineering

See Department of Physics, page 56.

Department of English

Professors Campbell (*Chair*), Dwyer, Sarracino
Associate Professor Rohrkemper
Assistant Professors Frawley, Hergert, Martin, Mead
(*Director of Professional Writing Program*)
Lecturer: O'Donnell (*Supervisor, English Secondary Education Program*)

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our

literary heritage. Excellence in both writing and literary studies is the fundamental aim of the Core Program and of the rigorous and comprehensive tracks which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The literature track requires English 209, 301, and 394; four 200 level English courses, three with middle digit 2 (one of which must be prior to 1800), and one with middle digit 4; three 300 level English courses, one with middle digit 1, and two with middle digit 9 (one of which must be prior to 1800); one English course with the middle digit 8; three English electives above the 100 level; and Modern Language 112 or higher.

The professional writing track requires English 185, 209, 302, and 393; four 200 level English courses, two with middle digit 2 (one of which must be prior to 1800), one with middle digit 4, and one with middle digit 8; two 300 level English courses, one with middle digit 1, and one with middle digit 9; one English elective above the 100 level; two courses from English 382, 384, or 385; one professional writing elective from English 281, 282, 283, 284, 381, 382, 385, 386, or 473; Computer Science 120; and Modern Language 112 or higher.

The secondary education track requires English 185, 209, 241, 242, 301, 302, 306, and 332; two 200 level English courses with middle digit 2 (one of which must be prior to 1800); one course from English 381, 384, or 385; one 300 level English course with middle digit 1; one English elective; Modern Language 112 or higher; and Education 205, 230, 305, 415, and 473.

English majors in all tracks must successfully complete a Modern Language course at the 112 level, or higher, if so placed.

An English major may not use any English 100 level course except English 100 or English 150 to satisfy core or major requirements.

The Department of English offers *minors* in literature and professional writing. Each minor requires 24 hours distributed as follows: **Literature** – English 209; three 200 level English courses, two with middle digit 2 (one of which must be prior to 1800), and one with middle digit 4; three 300 level English courses, one with middle digit 1, and two with middle digit 9 (one of which must be prior to 1800); and one English elective. **Professional Writing** – English 185, and 209; three 200 level English courses, one with middle digit 2, one with middle digit 4, and one with middle digit 8; two 300 level English courses, one with middle digit 8, and one with middle digit 9; and one English elective with middle digit 8.

011 Fundamentals of Composition

3 credits. An introduction to various forms of academic prose, with an

emphasis on developing students' fluency and voice in writing. *Credits are not applicable to the 125 required for graduation.* Staff.

100* Writing and Language

3 credits. **(Power of Language)** A writing course focusing on writing as a process of discovery of ideas, drafting, revision, and editing. Students read, write, and speak about a variety of aspects of the power of language. Assignments may include but are not limited to linguistic analysis, history of the language, and the analysis of language in and out of contexts. Topics include writing and literature, writing and persuasion, and writing and society. Staff. *Note: A student may be placed in English 100 or 150. Those assigned to English 100 must complete this course to satisfy the Power of Learning core and may not enroll in English 150. A student placed in English 150 may not enroll in English 100.*

105* Introduction to Literature

3 credits. **(Cultural Heritage)** A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature. Readings are drawn from major authors such as Homer and Shakespeare. Staff.

110* Literature: Expressive Form

3 credits. **(Creative Expression)** A study of how different forms of literature produce different aesthetic experiences and responses. The course will focus on a specific theme such as war, the self, the family, or contemporary culture to make comparisons between genres more obvious. Poetry, drama, short story, essay, film, and the novel are possible genres for consideration. Staff.

112* Introduction to Poetry

3 credits. **(Cultural Heritage)** A study of the English and American lyric from Old and Middle English through the Renaissance, 18th, 19th centuries, to the present day. Staff. *Note: This course was previously listed as English 115, The Lyric Tradition. Students who completed and have credit for English 115, may not enroll in English 112.*

113* Introduction to Drama

3 credits. **(Values and Choice)** The analysis of character and motive in 8-10 plays. A psychological approach will emphasize how actions and words reveal personality. Staff.

114* Introduction to Fiction

3 credits. **(Values and Choice)** Identifying values and making choices through a study of fictional narratives: short stories, novellettes, and novels. Staff.

116* Film as Literature

3 credits. **(Creative Expression)** An introduction to film as an art form with particular attention to the discourse of film: how film "speaks" to us; how we speak about film. Staff.

121* Money and Status in American Literature

3 credits. **(Values and Choice)** This course begins by examining Max Weber's analysis of the "Protestant Work Ethic," and other political, philosophical and historical underpinnings of wealth in America, including the earliest visions of America as a new Eden, an abundant paradise. Students will read ten important works, and each student will keep a journal to be used in discussion groups and also as a source for essays. Of five or six essays written, several will be selected by the student to be rewritten and handed in for grading. There will also be periodic short quizzes and a final examination. Prof. Sarracino.

135* Shakespeare Through Performance

3 credits. **(Creative Expression)** Students gain a deep critical and imaginative understanding of Shakespeare's plays and a knowledge of the Elizabethan theatre and its stage conventions by reinforcing textual analysis with informal performance of scenes from several key works. Staff.

150* Advanced Writing and Language

3 credits. **(Power of Language)** A writing course designed to explore the writing process while studying the history of the English language,

its past and present uses and powers. Students will be writing, reading, and speaking about a variety of aspects of the history and power of language. Assignments may include but are not limited to linguistic analysis, history of the language, de-constructive techniques, and the analysis of language in and out of contexts. *Note: A student may be placed in English 100 or 150. Those assigned to English 100 must complete this course to satisfy the Power of Learning core and may not enroll in English 150. A student placed in English 150 may not enroll in English 100.* Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisites: Power of Language requirement, Computer Science 120, and permission of the instructor.* Profs. Hergert, Mead, Rohrkemper.

209 Introduction to English Studies

3 credits. The study of English as an academic discipline with emphasis on close reading and theories of textual analysis, library research on literary, pedagogical, and rhetorical topics, and terminology of language and literary analysis, among other primary considerations. **Required of English majors and recommended for those considering the English major.** Staff.

221* The Literature of Medieval England

3 credits. **(Cultural Heritage)** A study of the literature and culture of Medieval England, with an emphasis on sexual roles, philosophy and cosmology, historical events, and the literary genres of this formative period in English history. *Course fulfills the pre-1800 requirement.* Prof. Martin.

222* Literature of the English Renaissance

3 credits. **(Cultural Heritage)** A study of the literature and culture of the Renaissance, with an emphasis on sexual roles, philosophy and cosmology, political values, and the literary forms of this yeasty time of rebirth and new knowledge. *Note: Students who have credit for English 320 or 322 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Martin.

223* English Neo-Classicism

3 credits. **(Cultural Heritage)** A study of the prose and poetry from the period of 1600 to 1800 with an emphasis on Dryden, Pope, Swift, Sterne, and Johnson. *Note: Students who have credit for English 323 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Dwyer.

224* English Romanticism

3 credits. **(Cultural Heritage)** A study of the verse and prose of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats, developing various concepts of Romanticism. *Note: Students who have credit for English 327 may not enroll in this course.* Prof. Dwyer.

225* Victorian British Literature

3 credits. **(Cultural Heritage)** A study of selected prose and poetry of the Victorian Age, emphasizing the relationship of the literary text to social and cultural conditions. Authors will include Tennyson, Dickens, Carlyle, the Brownings, and Hardy. *Note: Students who have credit for English 328 may not enroll in this course.* Prof. Frawley.

226* Twentieth Century British Literature

3 credits. **(Cultural Heritage)** An examination of British literary, cultural, and social thought in the twentieth century as evidenced in a number of literary works by authors from England and other nations of the British Commonwealth. *Note: Students who have credit for English 329 may not enroll in this course.* Profs. Frawley, Rohrkemper.

241* American Literature I

3 credits. **(Cultural Heritage)** This course will assume general familiarity with American history and literature and build upon that basic knowledge to explore themes in American literature from the time of the Puritan settlers through the later nineteenth century, focusing on the Civil War. *Note: Students who have credit for English 340 may not enroll in this course.* Prof. Sarracino.

242* American Literature II

3 credits. **(Cultural Heritage)** An examination of American literary, cultural, and social thought from the late nineteenth century to the present, as evidenced in a number of representative texts. *Note: Students who have credit for English 341 or 342 may not enroll in this course.* Prof. Rohrkemper.

245* Growing Up in America

3 credits. **(Values and Choice)** The main purpose of this course is to allow students, through a careful reading of important American novels and biographies, better to understand the distinct experiences that comprise growing up in America. In this course we will explore deeply both the uniqueness of experiences of growing up in America, and also the universality of shared problems, crises, challenges, and joys. Staff.

246* Minority Voices in American Literature

3 credits. **(Cultural Heritage)** A study of major works of American literature by writers who traditionally have been marginalized on the basis of race, class, and gender. Staff.

251* The Literature of Laughter

3 credits. **(Creative Expression)** A study of works from a variety of literary genres which create and comment on humor. Students will read a fable, short stories, novels, light verse, a play, and humorous essays, as well as essays which deal with the theories of humor. Comic forms represented include humorous social commentary, satire, and black comedy. Works to be read include "My Life and Hard Times," "A Modest Proposal," "Praise of Folly," and *Catch-22*. *Prerequisite: Completion of Power of Language requirement.* Prof. Hergert.

281* Writing and Analyzing the Short Story

3 credits. **(Creative Expression)** Students will analyze classic short stories using the language and concepts of literary criticism through discussion, oral presentations, and a major research paper. Emulating classic literary models, they will write original short stories, revising according to detailed critiques by their peers and the instructor. *Prerequisite: Completion of Power of Language requirement.* Staff.

282 Writing in the Health Professions

3 credits. Students will read and analyze the discourse common to the medical professions in addition to literature about the profession. Students will practice the forms of medical writing, culminating in a research project. *Prerequisite: Permission of instructor. Professional Writing majors must also have completed English 185.* Spring semester, alternate years. Prof. Mead.

283 Writing for Government and the Judicial System

3 credits. A survey of the types of writing common in government, politics, and law. Students will practice basic legal analysis, statistical analysis, persuasion, and more advanced forms of legal writing such as the appellate brief. **Highly recommended to pre-law and political science majors.** *Prerequisite: Permission of instructor. Professional Writing majors must also have completed English 185.* Prof. Mead.

284 Writing in the Social Sciences

3 credits. Students will analyze articles, books, reviews, and research in the fields of psychology, political science, anthropology, sociology, history, and economics. In addition, students will practice writing a variety of research forms, including the observation, experiment, survey/interview, etc. *Prerequisite: Professional Writing majors must have completed English 185.* Alternate years. Prof. Mead.

301 History of the English Language

3 credits. A study of the evolution of the English language from its Indo-European and, specifically Germanic origins into its modern form by observation of changes in vocabulary, grammar, and pronunciation. These changes are examined, primarily, in selected readings from Old, Middle, and Renaissance English literature. Fall semester, alternate years. Prof. Martin.

302 Grammar and Linguistics

3 credits. A summary of traditional, transformational, and transactional grammars; and structural, social, and psycholinguistics, including biological and environmental influences on language acquisition. Spring semester, alternate years. Prof. Mead.

305 Methods Seminar in Teaching Literature

4 credits. Approaches to teaching literature at the secondary level, practical application of various methodologies through internships in local middle or high schools. *Prerequisite to professional semester.* Prof. O'Donnell.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and/or the Learning Center. *Prerequisite to professional semester.* Prof. O'Donnell.

311 Genre Studies

3 credits. A study of a particular genre such as autobiography or the non-fiction novel. Representative works will be discussed. Since the course may vary in focus, it may be repeated for credit, providing the content is not duplicated. Staff.

313 Studies in Drama

3 credits. A study of drama considering such issues as links between the visual and verbal representation of meaning, and the development of the concepts of comedy and tragedy. Since the course may vary in focus from early drama to modern, it may be repeated for credit, providing the content is not duplicated. Profs. Campbell, Martin.

317 Studies in the Novel

3 credits. A study of the novel, including the development of the genre and its literary history in particular periods. Representative works will be discussed. Since the course may vary in focus from early forms to modern, it may be repeated for credit, providing the content is not duplicated. Fall semester. Staff.

318 Studies in Poetry

3 credits. A study of at least three major poets from one or more periods of American or English literature. Staff.

332 Shakespeare

3 credits. A study of representative works of Shakespeare. Spring semester. Profs. Campbell, Martin.

352 The Fantastic in Literature

3 credits. A study of major works of fantasy (Alice in Wonderland, The Hobbit, The Golden Key, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic." Fall semester, alternate years. Prof. Sarracino.

357 Women and Literature

3 credits. A study of the effects on women writers and readers of a male dominated literary tradition. Alternate years. Prof. Frawley.

371-379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/ faculty interest. Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite: permission of instructor.* Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentation of technical and scientific information. *Prerequisite: Professional Writing majors must have*

completed English 185 and one 200 level Professional Writing course. Profs. Hergert, Mead.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course in advanced writing and professional editing. *Prerequisite: English 185 and permission of instructor. Professional Writing majors must also have completed a 200 level Professional Writing course.* Profs. Hergert, Mead.

385 Writing for Publication

3 credits. Advanced study of the writing of non-fiction copy editing and of techniques for promoting one's own manuscripts. *Prerequisite: Permission of instructor. Professional Writing majors must have completed English 185 and a 200 level Professional Writing course.* Prof. Hergert.

391 Chaucer

3 credits. A study of *The Canterbury Tales* and shorter works, with a focus on the art of the tales and on cultural issues such as the place of women in medieval society. *Note: Students who already have credit for English 331 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Martin.

393 Seminar in History and Theory of Rhetoric and Composition

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisites: Professional Writing concentration, English 185, and one 200 level Professional Writing course.* Spring semesters, alternate years. Prof. Mead.

394 Senior Seminar in Literary Theory

3 credits. A seminar for literature majors on the history of literary theory and criticism. *Prerequisites: English Literature concentration, or permission of the instructor.* Fall semester, alternate years. Prof. Dwyer.

395 The Renaissance Epic: Spenser and Milton

3 credits. A study of representative works by Spenser and Milton, with emphasis on issues of Renaissance culture such as religion, politics, and gender. *Note: Students who have credit for English 333 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Martin.

397 Major Authors

3 credits. A study of the writings of one or more American or British author(s) such as Blake/Pope, Faulkner/O'Neill, Austen/Eliot, Hall/Bly/Kinnell. Since the authors studied may vary from term to term, the course may be repeated for credit, provided the content is not duplicated. Staff.

470-479 Internships

1-3 credits. On-campus internships may be requested in the student's sophomore, junior, or senior year. Off-campus internships are for students proven competent in on-campus internships or judged as having special aptitudes for the specific internship. *Applications for internships in the Department of English are due March 15 for summer and fall semesters, and November 15 for spring semester.* Prof. Mead.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite: Education 230.* Prof. O'Donnell.

Department of Fine and Performing Arts

Professors Harrison (*Chair*), Kitchen
Associate Professors Douglas, Stites
Assistant Professors Friedly, Palmquist,
Rohrbacher, Severeid
Instructors Hunter, Schellenberg
Lecturer Ronning

Bachelor of Arts; Bachelor of Science

The department offers three majors which lead to the degree of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, or Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theatre. Minors are offered in Visual Art, Music, Theater, and Fine and Performing Arts. The music programs are fully accredited by the National Association of Schools of Music.

Fine and Performing Arts

The *minor in The Fine and Performing Arts* is intended for those students with a broad *interest* in the Arts; it does not necessarily demand a *skill* in any particular arts area. The minor includes one introductory course with an academic emphasis and one with an experiential emphasis in each discipline. Required courses are Art 105 or 106, and 155; Music 105 and 101-103 or 115 or 305; Theater 105 and 155 or 165; Dance 101; and FAPA 455. The FAPA minor totals 22 credits.

455 The Arts in America Today

3 credits. An investigation of contemporary principles and common goals among the arts in American society with an emphasis on the development of critical and evaluative skills. *Prerequisite: FAPA minors must previously complete all other coursework for the minor; other students require permission of the instructor.* Spring Semester. Prof. Douglas.

Visual Arts

The academic and the practical courses in the visual arts program aim to refine students' creative potential, expand their judgment of the visual arts, and discern the contrasts and relationships among the arts of our Western culture and those of non-Western traditions.

Minor in Visual Arts. The minor in Visual Arts requires Art 105, 106 or 220, 155, 203 or 324, and six hours of electives in visual arts courses. Communications 315 may be one of the elective courses.

105* Drawing I

3 credits. (**Creative Expression**) Studio practice in basic drawing media for sketching and rendering both live and inanimate subjects. Profs. Friedly, Schellenberg.

106 Ceramics I

3 credits. Introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

155* Introduction to Art

3 credits. **(Cultural Heritage)** An overview course to introduce students to the range and theories of European/American painting and to acquaint them with ramifications social, political, aesthetic, and economic revealed by the arts; with further emphasis on modes of art deriving from other than our historic Western impulses. Prof. Schellenberg.

203* Twentieth Century American Art

3 credits. **(Cultural Heritage)** An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. Studio easel painting in opaque media, with stress on pictorial organization and application of color theories. *Prerequisite: Art 105 or permission of the instructor.* Prof. Schellenberg.

206 Ceramics II

3 credits. An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite: Art 106.* Prof. Friedly.

220* Sculpture

3 credits. **(Creative Expression)** An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and instruction in the use of the sculptor's materials and techniques. Prof. Friedly.

351 Printmaking

3 credits. Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite: Art 105 or permission of the instructor.* Prof. Friedly.

Dance

DA 101* Interpretive Movement

1 credit. **(Physical Well Being)** Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Graded P/NP. Prof. Williams-Henry.

DA 102* Introduction to Ballet

1 credit. **(Physical Well Being)** Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Graded P/NP. Prof. Williams-Henry.

Music

The music courses are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained at the department office.

The department has adopted requirements for junior standing for music majors. A copy of these requirements is available in the department office.

The music education major requires Music 100, 101, 102, 103, 104, 150, 201, 202, 203, 204, 205, 231, 234, 237, 238, 301, 311, 312, 321, 322, 343, 344, 440, 441, 442, 443, 471, a minimum of twelve hours of applied music instruction, a minimum of seven credit hours in ensemble participation, a senior recital, and Education 205.

The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 100, 101, 102, 103, 104, 141, 150, 151, 201, 202, 203, 204, 205, 231, 234, 237, 252, 301, 321, 343, 353, 353L, 354, 440, 441, 442, 443, 455, 455L, 456, 456L, 473, 474, 475, and 479; a minimum of twelve semester hours in applied music instruction; a senior recital; and a minimum of six credit hours in ensemble. Also required are Biology 201, Psychology 322 and 334. Specific courses to be included in the student's Core Program are Biology 105 or 111, Mathematics 151, and Psychology 105. A six-month internship in an approved clinical facility is required for the music therapy degree and is taken after the completion of the four-year music therapy program.

The music therapy program is approved by the National Association for Music Therapy and the National Association of Schools of Music.

In order to graduate, a music therapy or music education major must maintain the following standards:

(1) *A music therapy major* must earn a grade of C- or better in all music and music therapy courses. *A music education major* must earn a grade of C- or better in all music and music education courses, and in Education 205.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicums and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

The Bachelor of Arts in Music normally requires Music 100, 101, 102, 103, 104, 201, 202, 203, 204, 205, 321, 322, 419, 440, 441, 442, 443, twelve semester hours credit in applied music, a senior recital, and three hours of ensemble credit. The student must also complete Modern Language 112 (or a higher course if so placed by testing). The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental advisor, a Bachelor of Arts music major works out a program which includes at least 40 hours of music courses.

The Minor in Music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The Minor in Music requires Music 101-103; 102-104 or 305; 105; 441 or 442 or 443; four semesters of instruction on one instrument or in voice, with registration in Music 100 (Repertoire Class) in each of the same semesters; minimum of two credits of music ensemble participation; and a minimum of three credits of music electives.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to pre-college students, adults, and college students who desire to take instruction without credit. Instruction is available from departmental faculty and other qualified teachers. Interested persons should contact Prof. Debra Ronning, director of the Preparatory Division.

100 Repertoire Class

0 credit. This class provides performance opportunities for students in applied music. It meets for 1 hour each week and is required for all music majors and minors who are enrolled for applied music instruction.

101 Music Theory

2 credits. Fundamentals of music theory, harmony and form with emphasis on scales, keys, modes, notation, clefs, diatonic triads and non-harmonic tones. Fall semester. Prof. Grubb.

102 Music Theory

2 credits. A continuation of Music 101, with an introduction to modulation, seventh chords, borrowed chords, secondary dominant and leading tone chords. Includes binary and ternary forms. *Prerequisites:* Music 101, 103, or permission of instructor. Spring semester. Prof. Grubb.

103 Fundamentals of Sight Singing and Training

1 credit. Music reading and ear training according to the Kodaly concept using syllables based on moveable "Do," kinesthetically reinforced by hand signs. Study and drill in rhythm will include the use of the basic beat patterns. Linear dictation including rhythmic elements. Aural skills related to theoretical analytical materials covered in Music 101. *Corequisite:* Music 101. Fall semester. Prof. Grubb.

104 Sight Singing and Ear Training

1 credit. A continuation of 103 including chromaticism, modulation, modes and more difficult rhythms and intervals, C clefs. *Prerequisite:* Music 103 or permission of instructor. Spring semester. Prof. Grubb.

105* Introduction to Music Literature

3 credits. (**Cultural Heritage**) Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Douglas, Harrison, Stites.

106* Interpretation of Music

1 credit. (**Creative Expression**) This is a course for general college students who can read music and who wish to participate in a musical ensemble or continue private lessons. It is designed to supplement the musical experience by developing a deeper understanding of musical interpretation, as distinct from technique. In the lectures which discuss

particular aspects of interpretation, examples from those works being prepared for performance in the ensembles and lessons will be used. This course fulfills the AU core requirement in "Creative Expression" when coupled with enrollment in an ensemble or private instruction for both semesters the same academic year in which it is taken. One 50-minute class meeting per week. Spring semester. Prof. Kitchen.

111 Voice Class

1 credit. Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Profs. Mekeel, Stites.

115* Music Fundamentals at the Keyboard

3 credits. (**Creative Expression**) This course provides the student with basic skills in producing and reading music at the keyboard. Attention is given to ear training, basic keyboard technique, and musicianship, as well as to sight reading. The course utilizes the department's digital piano laboratory. Daily practice is required. Prof. Douglas.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite:* music major. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Prof. Ronning.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Cullen.

120 Guitar Class

1 credit. A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite:* Music 119 or permission of instructor. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Prof. Cullen.

141 Recreational Music

2 credits. Survey of recreational music resources and activities, with emphasis on the development and application of leadership and music performance skills in recreational and therapeutic settings. *Prerequisite:* music major or permission of instructor. Spring semester. Prof. Rohrbacher.

150 Professional Seminar

0 credit. A weekly seminar for music majors enrolled in professional degree programs. Guest speakers, faculty, and students present topics of mutual interest, including career development, application of music skills, and professional service. Required of music therapy and music education majors each semester. Staff.

151 Introduction to Music Therapy

2 credits. A survey of music therapy through lecture-demonstration sessions, readings, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite:* music major or permission of instructor. Fall semester. Prof. Rohrbacher.

201 Advanced Music Theory

2 credits. Advanced harmony including ninth, eleventh, and thirteenth chords, chromatic harmony and form and analysis. *Prerequisite:* Music 102, 104. Fall semester. Prof. Douglas.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on late 19th- and 20th-century harmonic practice. Includes composition using 20th-century techniques. *Prerequisite:* Music 201, 203. Spring semester. Prof. Douglas.

203 Advanced Sight Singing and Ear Training

1 credit. Continued emphasis on reading and dictation skills with concentration on modulation and chromaticism using some 20th-century material. C clefs. *Corequisite: Music 201.* Fall semester. Prof. Grubb.

204 Advanced Sight Singing and Ear Training

1 credit. A continuation of Music 203 with concentration on reading atonal melodies and 20th-century material. *Corequisite: Music 202.* Spring semester. Prof. Grubb.

205* Music of Non-Western Cultures

3 credits. **(Foreign Cultures and International Studies)** Contemporary music indigenous to eight non-Western geographic regions of the world are studied and compared in terms of tonal and rhythmic attributes, and as an approach to promoting socio-cultural awareness. Prof. Rohrbacher.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Profs. Moore, Webster.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Luckenbill.

235 History of Jazz

3 credits. Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, and viola in individual and class settings. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Leithman.

238 Intermediate String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching cello and double bass in individual and class settings. *Prerequisite: Music 237. The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Prof. Zurfluh.

242 Mozart and Eighteenth-Century Classicism

3 credits. **(Cultural Heritage)** Study of a symphony, a sonata, a string quartet, several concerti, lieder, an opera, masses and other sacred choral works by Mozart provides understanding of how the composer exemplified eighteenth-century classicism in his music. Prof. Stites.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: Music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202-204, 269.* Fall semester. Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Provides students opportunities to develop skills in singing, song leading, listening, creating, and performing. Emphasizes applying knowledge and skills to provide musical experiences for young children and work with music specialists. Includes observation of music instruc-

tion and performance. Prof. Palmquist.

311 Music in the Elementary School

3 credits. Study of techniques, methods and materials used in teaching elementary music classes. Emphasizes performance, observation, assessment, and organization through observation, teaching, and participation in class music activities. *Prerequisite: Music major or permission of instructor.* Fall semester. Prof. Palmquist.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experiences included. *Prerequisite: Music major or permission of the instructor.* Spring semester. Prof. Kitchen.

321 Instrumental and Choral Conducting Fundamentals

3 credits. Instruction in the fundamentals of conducting. Topics include conducting techniques, choral and instrumental methods and problems, score reading, and interpretation. *Prerequisites: Music 202 and 204 or permission of instructor.* Fall semester. Prof. Kitchen.

322 Instrumental and Choral Conducting and Techniques

3 credits. A continuation of Music 321. *Prerequisite: Music 321.* Spring semester. Prof. Stites.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and a study of string ensemble techniques, methods, and literature. *Prerequisite: Music 238. The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Staff.

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Hall-Gulati.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343. The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Prof. Hall-Gulati.

353 Music Therapy Techniques

2 credits. The study of behavioral and music therapy techniques used in clinical practice, with emphasis on observation, assessment, program implementation, and accountability. *Prerequisite: Music 252.* Fall semester. Prof. Rohrbacher.

353L Music Therapy Techniques Laboratory

1 credit.

354 Music Research Methods

2 credits. Introduction to music research. Emphasis on reading, evaluating and applying research findings and on using research techniques in music therapy and music education. Includes the collection, codification, interpretation, and presentation of data. *Prerequisite: Psychology 105.* Spring semester. Prof. Palmquist.

371-379 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original

compositions. *Prerequisites or corequisites: Music 202 and 204.* Spring semester. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. *Credit for Music 431 is given only upon completion of Music 432. Prerequisites: two semesters of Music 269.* Not offered 1993-94. Prof. Ronning.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite: Music 431.* Not offered 1993-94. Prof. Ronning.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. *Prerequisites: Music 202, 204.* Fall semester. Prof. Douglas.

441 Music History and Literature I

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from antiquity until about the year 1700. Examples of great music will be ever present. *Prerequisites: Music 202 and 204 or permission of instructor.* Not offered 1993-94. Prof. Harrison.

442 Music History and Literature II

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from around the year 1700 through the 19th century. Examples of great music will be ever present. *Prerequisites: Music 202 and 204 or permission of instructor.* Fall semester. Prof. Harrison.

443 Music History and Literature III

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians of the 20th century. Examples of great music will be ever present. *Prerequisites: Music 202 and 204 or permission of instructor. NOTE: Students who have received credit for Music 417 may not enroll in either Music 443.* Spring semester. Prof. Harrison.

455 Music Therapy I: Principles

2 credits. A survey of literature on the nature and principles of music therapy, including theory, practice and research. The application of these principles according to specific client populations and preparation for clinical internship will be emphasized. *Prerequisites: Music 252, 353, 354; or permission of instructor.* Not offered 1993-94. Prof. Rohrbacher.

455L Music Therapy I Laboratory

1 credit. Not offered 1993-94.

456 Music Therapy II: Practices

2 credits. The study of philosophies and practices of disciplines as related to music therapy and the role of the music therapist as a treatment team member. Emphasis will be on the integration of the knowledge and skills associated with the practice of music therapy and issues related to professional employment. *Prerequisite: Music 455 or permission of instructor.* Not offered 1993-94. Prof. Rohrbacher.

456L Music Therapy II Laboratory

1 credit. Not offered 1993-94.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite: permission of department.* Prof. Palmquist.

473-75 Practical Experiences I-III: Music Therapy

1 credit each. Supervised field experiences (observation and participa-

tion) in an approved clinical facility. A minimum of thirty hours for each clinical experience is required. Music therapy majors only. *Prerequisites: Music 141, 151.* Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite: permission of instructor.* Prof. Rohrbacher.

481-489 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, performance or research under faculty supervision. *Prerequisite: permission of instructor.* Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department office for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles.

Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; ensemble registration for credit may be repeated. However, to receive credit, students must meet the standards for attendance at rehearsals and public performances established by the faculty director. Ensembles are graded P/NP.

Music 106 must be taken with ensembles or private lessons to fulfill the Creative Expression requirement in the Core curriculum. See the description of Music 106.

268* Voice

1 credit. Profs. Mekeel, Stites.

269* Piano

1 credit. Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Kitchen, Ronning, Schroeder.

270* Organ

1 credit. Prof. Schroeder.

271* Violin

1 credit. Prof. Palmquist.

272* Viola

1 credit. Prof. Palmquist.

273* Cello

1 credit. Prof. Zurfluh.

274* String Bass

1 credit. Prof. Zurfluh.

275* Guitar

1 credit. Prof. Cullen.

276* Flute

1 credit. Prof. Kirkpatrick.

277* Clarinet

1 credit. Profs. Hall-Gulati, Kitchen.

278* Oboe

1 credit. Staff.

279* Bassoon

1 credit. Staff.

280* Saxophone

1 credit. Profs. Hall-Gulati, Kitchen.

281* Trumpet/Cornet

1 credit. Prof. Webster.

282* French Horn

1 credit. Prof. Webster.

283* Trombone

1 credit. Prof. Moore.

284* Baritone/Euphonium

1 credit. Prof. Moore.

285* Tuba

1 credit. Prof. Moore.

286* Percussion

1 credit. Prof. Luckenbill.

360 Chamber Music

1/2 credit. General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Piano Trio, and Piano Ensemble will be formed as need arises.

361* Concert Choir

1 credit. Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Stites.

362 Choral Union

1/2 credit. Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. Mekcel.

365* Orchestra

1 credit. Open to all qualified students; acceptance subject to approval by director. Presentation of several concerts during the year. String, chamber, and full orchestra music is performed. *Prerequisite for winds and percussion: permission of instructor.* Prof. Palmquist.

368 Jazz Lab

1/2 credit. The Jazz Lab offers small groups of students instruction in the basic skills of improvisation, stylization, and performance. The lab complements the jazz component of the Concert Band. Prof. Kitchen.

369* Concert Band

1 credit. Open to all qualified students; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theatre

The minor in theater provides the student with opportunities to acquire and develop a broad range of skills and knowledge in theater design/technology or performance/literature, and allows the student the choice of concentrating in either of these areas.

The *minor in theater* requires the following: Theater 105, 155, 165, Dance 101, and two courses from English 113, 135, 313, and 332. For those completing the Design and Production concentration, Theater 255 and 350 are also required. For those completing the Performance concentration, Theater 360 and 365 are required.

105* Introduction to Theatre

3 credits. **(Cultural Heritage)** Introduction to the various interrelated arts and disciplines that make up theatre performance and production, such as acting, playwriting, directing, and scene design. Emphasis is on history, literature, and theory, with support from a textbook, audio-visual aids, analysis of scripts, and possibly one or more field trips. Profs. Hunter, Severeid.

155* Introduction to Theater Technology

3 credits. **(Creative Expression)** Examination and application of theatre staging, design, and lighting. Topics include scenery design and construction, execution of technical effects, and theatre safety. Prof. Hunter.

165* Basic Acting

3 credits. **(Creative Expression)** Theory and practice of the art and craft of the stage actor. Skills are developed in voice, body involvement, script analysis, style and theory. Students participate in projects requiring the memorization, creation, and presentation of scenes. Profs. Hunter, Severeid.

255 Design and the Theater

3 credits. A course emphasizing the artistic interpretation of dramatic literature as stage designs and the methods for presenting these concepts. Drawing and drafting skills are not required for this course. *Prerequisite: Theater 155.* Prof. Hunter.

350 Theater Design/Technology Practicum

0 credit. Satisfactory completion of involvement in design and production for major college production.

360 Theater Performance Practicum

0 credit. Satisfactory completion of performance in major college theater production.

365 Advanced Acting

3 credits. An advanced course in acting techniques and styles. Students will study, interpret, and perform scenes from classic dramas in theater history from the Greeks to the Absurdist. *Prerequisite: Theater 165.* Prof. Severeid.

French

See Department of Modern Languages, page 50.

German

See *Department of Modern Languages*, page 50.

Department of History

Professors K. Kreider, Mumford (*Chair*), Ritsch, Vassady,
Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 115 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts degree as a history major and receive certification in social studies. For further explanation, speak to a member of the History Department.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

History majors must successfully complete a Modern Language course at the 112 level (or higher if so placed).

For a *minor in history*, the student must successfully complete 18 hours of course work, composed of the following courses: History 115, 201, 202, and three additional history courses. Students with specific career or personal interests are encouraged to discuss these with the department chair.

115* Modern European History

3 credits. (**Cultural Heritage**) An examination of the major developments that have taken place in European history since 1500. This course will not survey all of the developments over 500 years, but choose those that seem significant in their impact on subsequent developments. Staff.

201* History of the United States to 1877

3 credits. (**Social World**) An examination of the major developments in U.S. history from the beginning to 1877. This course will involve a discussion of interpretations of the American past and of controversial issues in American history. Fall semester. Profs. Mumford, Winpenny.

202* History of the United States since 1877

3 credits. (**Social World**) An examination of the major developments in U.S. history since 1877. This course will involve an examination of both content and interpretations of the American past. Spring semester. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

208* Technology and Values in the American Experience

3 credits. (**Values and Choice**) An effort to understand the values implicit in the choices that have been made in substituting a newer technology for an older technology throughout American history. Transportation, systems of production, the generation of power, medicine, and armaments constitute areas of particular emphasis. Prof. Winpenny.

210* Europe Since 1789

3 credits. (**Social World**) An examination of major political, social, and cultural developments in Europe from the French Revolution of 1789 to modern times. Prof. Vassady.

215* English History to 1688

3 credits. (**Cultural Heritage**) An introduction to the political, social, and cultural history of England from the Anglo-Saxons to the Glorious Revolution, with particular attention to the growth of those attitudes and those institutions, such as the monarchy, parliament, the common law, and the church, which were brought to the American colonies. Fall semester. Prof. Poole.

216* English History since 1688

3 credits. (**Cultural Heritage**) An introduction to the political, social, and cultural history of modern Britain from the Glorious Revolution to the present, with particular attention to the growth of the monarchy, parliament, and the British Empire. Spring semester. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Fall semester, alternate years. Prof. Kreider.

218* Europe in the Twentieth Century

3 credits. (**Cultural Heritage**) An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Spring semester, alternate years. Prof. Kreider.

220* History of Soviet Union

3 credits. **(Foreign Cultures and International Studies)** A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Spring semester. Prof. Kreider.

221* History of Non-Violence

3 credits. **(Values and Choice)** An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. Kreider.

227* History of Africa

3 credits. **(Foreign Cultures and International Studies)** A survey of African history and culture from the beginning of modern times, including Africa's response to European imperialism and colonialism and the attainment of independence in the twentieth century. Prof. Vassady.

306 Recent History of the United States

3 credits. An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

310* American Ethnic History

3 credits. **(Social World)** A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

319 History of Tsarist Russia

3 credits. The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Fall semester. Prof. Kreider.

323 History of China

3 credits. A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

324 History of Japan

3 credits. A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

328 Modern Africa

3 credits. Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330-339 Studies in United States History

3 credits for each course. An analytical inquiry into special topics and periods: economic history, urban history, colonial America, the American Revolution, the Middle Period, the Age of Industrialism, technology and society, and so forth. Staff.

340-349 Minorities in United States History

3 credits for each course. An incisive view of minorities in a society venerating majoritarian rule: for example, Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff.

371-379 Special Topics

3 credits. Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Staff.

406 Social and Intellectual History of the United States

3 credits. An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Staff.

411 Greek and Roman History

3 credits. Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. *By special arrangement.* Staff.

412 Medieval History

3 credits. Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. *By special arrangement.* Staff.

480-489 Independent Study

Variable credit. Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites: approval of the department chair and the Provost, permission of instructor.* Staff.

498-499 History Seminar

3 credits. A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.

Department of Mathematical Sciences

Professors Blaisdell, D. Koontz, Shubert (*Chair*)
Associate Professors J. Koontz, Morse
Assistant Professors Sanchis, Thorsen

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

Some of these courses also satisfy the Core Program requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers six concentrations.

The *pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

The *general mathematics concentration* is for those who want to design their own programs in mathematics.

In addition to the major, the department offers a minor which requires Mathematics 121, 122, 151, 201, and nine credits of courses above 205.

All mathematics majors are required to take a minimum of 39 hours in mathematics courses, including Mathematics 121, 122, 201, 222, 231, 321, and at least one of 301 or 421. Computer Science 121 is required and should be taken as early as possible. Each major is also required to complete Modern Language 112 or above, or six hours of computer science courses in addition to Computer Science 121. Finally, at least one of the six concentrations must be completed as follows: (acceptable mathematics electives are courses numbered above 222).

The pure mathematics concentration requires Mathematics 301, 302, 421, 422, and six credits from other acceptable mathematics electives.

The secondary education concentration (required for secondary education certification) requires Mathematics 301, 341, 351, 421, six credits from other acceptable mathematics electives, and Education 205, 230, 305, 415, and 473.

The actuarial science concentration requires Mathematics 151, 331, 351, 352, 362, and 453; Accounting 105, 106; and Economics 101, 102. Also required is evidence of successful completion of the course 100 examination of the Society of Actuaries by February of the junior year, and one additional actuarial examination by February of the senior year. The completion of additional examinations is strongly recommended. The following courses contain material related to actuarial examinations: Math 121, 122, 222, 201, 331, 351, 352, 362, and 453

The statistics concentration requires Mathematics 151, 252, 331, 351, 352, and 453.

The computer science concentration requires Mathematics 362, either 352 or 422, and nine credits of acceptable mathematics electives; Computer Science 122, 221, 222, and one other 300- or 400-level computer science course other than 321. (These computer science courses also fulfill the modern language or computer skills requirement.)

The general mathematics concentration requires either Mathematics 352 or 422 and 12 credits of acceptable mathematics electives.

011 Intermediate Algebra

2 credits. An accelerated review of the fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101, 105, 117, 151, and 205. *Credits are not applicable to the 125 required for graduation.* Fall semester. Staff.

101 Precalculus Mathematics

4 credits. A highly accelerated study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. If time permits, conic sections will also be studied. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency).* Fall semester. Staff.

105* Mathematics for Liberal Studies

3 credits. (**Mathematical Analysis**) An introduction to mathematical structures and applications designed to help students understand the historical and contemporary role of mathematics in human endeavors. Topics will be selected from a variety of areas such as logic, set theory, probability, statistics, graph theory, computer science, and matrix algebra. Topics may vary each semester. *Prerequisite: Mathematics 011 (Competency).* Staff.

117 Concepts of Calculus

4 credits. Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, exponential functions, and integration. *Prerequisite: Mathematics 011 (competency).* *Note: Students who have received credit for Mathematics 121 may not enroll in this course.* Staff.

121* Calculus I

4 credits. (**Mathematical Analysis**) The basic concepts and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency).* *Note: Students who have received credit for Mathematics 117 receive 2 credits for this course.* Staff.

122 Calculus II

4 credits. A continuation of Ma 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry in the plane, parametric equations, polar coordinates, sequences and series are included, and an in-depth study of integration is completed. *Prerequisite: Mathematics 121.* Staff.

151* Probability and Statistics

3 credits. **(Mathematical Analysis)** The basic principles of probability, distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and methodology and their relation to everyday life. *Prerequisite: Mathematics 011 (competency).* Staff.

201 Linear Algebra

3 credits. A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, eigenvectors and linear transformations. Students will be expected to do mathematical proofs. *Prerequisite: Mathematics 121.* Prof. J. Koontz.

205 Mathematics for Elementary Teachers

3 credits. Provides a foundation in knowledge of mathematics essential for teaching in the elementary schools. Topics include number systems, geometry of measurement, coordinate geometry, three dimensional geometry, the metric system, functions, and various problem solving techniques. The course will address content preparation for elementary teachers as suggested by the National Council of Teachers of Mathematics. *Prerequisite: Completion of Mathematical Analysis core requirement. This course may be used to satisfy Math 212 for students under the Old Core requirements.* Staff.

222 Calculus III

4 credits. A continuation of Math 122, completing the topics of the calculus sequence, including three-dimensional analytic geometry, series, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. Fall semester. Prof. Shubert.

252 Statistical Methods

3 credits. A continuation of material presented in Math 151. Statistical techniques are presented for solving a variety of problems arising in business, the social, physical and life sciences. Topics include simple and multiple regression, model building, analysis of count data, nonparametric statistics, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Abstract Algebra I

3 credits. A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201.* Fall semester, even numbered years. Prof. Sanchis.

302 Abstract Algebra II

3 credits. A continuation of Abstract Algebra I involving a more in-depth study of the structures introduced in Ma 301 and abstract vector spaces. Emphasis will be on the development of skills in proof construction and interpretation of abstract concepts. *Prerequisite: Mathematics 301.* Spring semester, odd-numbered years. Prof. Sanchis.

321 Differential Equations

3 credits. A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods are studied, including techniques for solving linear systems of differential equations. *Prerequisite: Mathematics 201, 222.* Spring semester. Prof. D. Koontz.

331 Operations Research

3 credits. A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, integer programming, dynamic programming, queuing theory, decision analysis, network analysis, and simulation. *Prerequisites: Mathematics 151, 201.* Fall semester, even-numbered years. Prof. Shubert.

341 Modern Geometry

3 credits. The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. Fall semester, odd-numbered years. Prof. J. Koontz.

351 Mathematical Statistics I

3 credits. A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's t, Snedecor's F, and normal distributions. *Prerequisite: Mathematics 151, 222.* Fall semester. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. A continuation of MA 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 201, 351.* Spring semester. Prof. Blaisdell.

362 Numerical Analysis

3 credits. A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in the sciences, including actuarial science. Topics include solutions of equations in one variable, numerical integration, polynomial approximation, solution of linear systems, and numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; Computer Science 121.* Fall semester, odd-numbered years. Prof. Thorsen.

370-379 Special Topics in Mathematics

Variable Credit. A study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, limits and metric spaces, continuity, and differentiation. *Prerequisites: Mathematics 201, 222.* Fall semester, odd-numbered years. Prof. Sanchis.

422 Real Analysis II

3 credits. A continuation of Math 421, including such topics as integration, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring semester, even-numbered years. Prof. Sanchis.

453 Time Series Analysis

3 credits. Applied statistical methods. A study of statistical methods including analysis of variance, regression analysis, and time series analysis. The course is specifically geared toward the student's preparation for Course 120 Actuarial Examination. Prof. Sanchis.

480-489 Independent Study

Variable credit. Staff.

Education 305 Practicum in Secondary Education

4 credits. *Prerequisite: Education 230.* Fall semester, even-numbered years. Prof. J. Koontz.

Department of Modern Languages

Associate Professors Daiga, Goodling, Trachte (*Chair*)
Assistant Professors Barnada

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture. The pragmatic virtues of a usable skill are joined with the humanistic values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves the core program, bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by completing 30 credit hours in one language above 112. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are also encouraged to participate in the Brethren Colleges Abroad program.

Department majors must complete the following courses: Modern Languages 211, 212, 311, 323, and 495. If offered, a 312 or a 371 course may be substituted for 323. At least two of the first four courses above must be completed on the Elizabethtown College campus with members of the department faculty. In addition, the senior research project (495) must be written on campus under departmental faculty supervision. Majors must participate in the BCA program for one year and the courses taken must include advanced conversation and composition, phonetics, French/German/Spanish history, and History of (French/German/Spanish) Literature for a minimum of 15 credits in the major. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are: Modern Language 211, 212, 311, and 323. If offered, a 312 or a 371 course may be substituted for 323. At least two of the first four courses above must be completed on the Elizabethtown College campus. The remaining two may be completed on campus or in the Brethren Colleges Abroad program. After completing the required course work, students must take

the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

International students with fluency in either French, German, or Spanish may pursue a major or minor under certain circumstances. First, they must place into the 300 level at Elizabethtown College. Second, if they participate in the BCA program, they must study only at the university level and must enroll in advanced literature or linguistics courses. Third, successful completion of the major or minor will be contingent upon the rating of Superior on the oral proficiency interview.

A placement test is administered free of charge during summer orientation for freshmen. In addition, it is offered during the first week of classes in the fall and in spring semester, prior to Fall pre-registration. It may be taken at any other time during the academic year for the general college fee of \$50. All students with more than two years of language preparation must take the placement test before registering in language courses for academic credit.

111 Fundamentals of Language and Culture I (French, German, Spanish)

4 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks.

112* Fundamentals of Language and Culture II (French, German, Spanish)

4 credits. (**Foreign Cultures and International Studies**) Expansion of basic elements of structure and the phonetic system in culturally authentic contexts. Additional development of communicative competency in five skill areas: listening, speaking, writing, reading, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks. *Prerequisite: Modern Language 111 or placement by examination.*

211* Communication Through Language and Culture I (French, German, Spanish)

3 credits. (**Foreign Cultures and International Studies**) Emphasizes functional proficiency. A functional-notational syllabus expands use of linguistic tasks such as asking questions, stating facts, describing, narrating, and expressing feelings. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 112 or placement by examination.*

212* Communication Through Language and Culture II (French, German, Spanish)

3 credits. (**Foreign Cultures and International Studies**) Expanded use of linguistic functions. Introduction and development of more advanced tasks such as sustaining opinions, explaining, comparing, and hypothesizing. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 211 or placement by examination.*

311 Making of Modern Society (French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena and issues which have shaped and continue to shape the modern nation. Readings are taken from literary, sociological and political sources. Films, slides, and audio and videotapes supplement written materials. *Prerequisite: Modern Language 212 or permission of instructor.*

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: French 211 or permission of instructor.*

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Spanish 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres. *Prerequisite: Modern Language 311 or permission of instructor.*

371-379 Special Topics (French, German, Spanish, Russian)

3 credits. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability. *Prerequisite: Modern Language 212 or permission of instructor* (*Russian courses are offered if there is sufficient interest. Course 371 provides a reading knowledge in the language.)

481-489 Independent Readings (French, German, Spanish)

3 credits. For senior language majors. Independent projects in some area of language or literature.

495 Senior Research Project

3 credits. For senior language majors. Involves researching a literary, linguistics, or cultural topic and the writing of a major paper in the target language. This capstone experience will be closely supervised by department faculty.

English As A Second Language

ESL 111 Intermediate English as a Second Language

2 credits. Focuses on the improvement of speech, listening, reading and writing skills, emphasizing the descriptive and narrative paragraph. Audio and videotapes supplement the textbook and develop communicative competency. *Prerequisite: Placement by examination and TOEFL score. NOTE: Credits do not count toward graduation requirements.*

ESL 112* Advanced English as a Second Language and American Culture

3 credits. **(Foreign Cultures and International Studies)** A continuation of ESL 111, expanding the student's functional proficiency through advanced grammar and essay development, audio/video materials to improve listening comprehension, and extended oral discourse. Reading selections increase reading comprehension and awareness and understanding of American culture. *Prerequisite: ESL 111 or placement by examination and TOEFL score.*

Department of Occupational Therapy

Associate Professor Jones

Assistant Professor Farley

Instructor Clark

Bachelor of Science

Professional Accreditation: The Department of Occupational Therapy has been accredited since 1976 by the American Occupational Therapy Association and the American Medical Association. The department was reaccredited in 1989.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 398, 402, 405, 407, 409, 410, 412, 421, 498; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; and Mathematics 151 and 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Fieldwork Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of fieldwork education. Students are responsible for their transportation and travel costs to and from assigned clerkship and fieldwork centers. Such assignments will begin in the junior year and continue throughout the program. Students should expect to pay room and board expenses during the Level-II fieldwork experience at the affiliated hospital or clinic. They are also responsible for other related fieldwork expenses such as physical examinations, vaccinations, and child abuse/police clearance when required by the facility.

The student may select either of the following options

with faculty approval:

First Option: The student may complete three years of academic work followed by three months of Level-II fieldwork experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II fieldwork during the summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II fieldwork experience.

Specialty Fieldwork

After completing the required six months of Level-II fieldwork, the student may elect to complete specialty Level-II fieldwork. The clinical experience may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education.

Related Expenses

Additional expenses for the occupational therapy student normally include transportation to fieldwork sites, room and board during Level II fieldwork, insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association. There are reduced rates for students.

National Certification Examination

Upon being awarded the bachelor's degree in occupational therapy and successful completion of Level-II fieldwork, the student is eligible to sit for the national certification examination, held twice a year, in July and January. The examination is conducted by the American Occupational Therapy Certification Board (AOTCB) which is responsible for awarding certification and the designation Occupational Therapist Registered (OTR).

Admission Requirements for the Department

1. Prior To Admission Into The Department:

- The student must submit an application with all supporting documentation to the Director of Admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. Transfers are permitted at the sophomore level only, on a space available basis.
- The student must have an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- Freshman Occupational Therapy majors are selected by the Occupational Therapy faculty. The selection process includes consideration of rank in high school class, SAT scores, TSWE scores, high school science grades, interview, and knowledge of occupational therapy.
- The names of freshmen Occupational Therapy students selected for the next academic year are

submitted to the Director of Admissions.

- The Department of Occupational Therapy requires that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the Department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a physical or emotional problem arise which the Department feels may jeopardize the student's participation in the program.

2. Evaluation After Admission Into The Department:

- Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the Department, the student must maintain the following standards:
 - Have at least a 2.5 average in all courses required for the major (both occupational therapy and related requirements) at the end of the sophomore year.
 - Obtain grades of at least C+ or better in OT 303, 316, 402 and 405.
 - Satisfactorily meet the standards and requirements in all phases of fieldwork education including Level-I fieldwork, laboratory, and Level-II fieldwork experience.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for nonmajors is required.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for nonmajors is required.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected

activities, fine motor and product oriented as well as games and gross motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors is required.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors is required.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy with emphasis on normal and abnormal movement. Measurement techniques for range of motion and muscle testing are presented. Concepts are integrated in lab experiences. *Prerequisites: Biology 201; Occupational Therapy majors only.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, and ceramics. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth through Adolescence

3 credits. An examination of normal human development along the birth through adolescence segment of the developmental continuum. Emphasis is on development and occupational behaviors in the areas of biophysical, cognitive, and psychosocial domains. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. Case studies and professional reporting are coordinated with lecture/laboratory (2 credits) and seminar/Level-I Fieldwork (2 credits). *Corequisite: Occupational Therapy 305. Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors is required.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors is required.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies and professional reporting are coordinated with lecture/laboratory (2 credits) and seminar/Level-I Fieldwork (2 credits). *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors is required.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester. *NOTE: O.T. students may not count these credits toward graduation requirements.*

371-379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor required.*

398 Level II Fieldwork—Psychosocial Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of psychosocial rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum scores on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Occupational Therapy majors only.* Summer term.

402 Geriatric Occupational Therapy

2 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as geriatric occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Occupational Therapy majors only.* Spring semester.

405 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approaches used to enhance the function of individuals with major physical disabilities. Case studies and professional reporting are coordinated with lecture/laboratory (2 credits) and seminar/Level-I Fieldwork (2 credits). *Prerequisite: Occupational Therapy 218; Corequisite: Occupational Therapy 407. Occupational Therapy majors only.* Fall semester.

407 Physical Pathology

2 credits. Medical lectures relative to the etiology, prognosis and treatment of the major conditions resulting in physical disability.

409 Methods of Research

2 credits. The scientific method as the basis for all research. Included are research designs and evaluation and guidelines for conducting research. Single subject Research Design is also emphasized. Prerequisites: Mathematics 151, 252 suggested. *Permission of the instructor for non-majors is required.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the administration and supervisory functions of managing an occupational therapy department. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, evaluation, marketing, and recruitment. *Occupational Therapy majors only.* Spring semester.

412 Senior Practicum

2 credits. The course offers senior occupational therapy students the opportunity to plan scholarly research within an area of interest. Other topics including grant writing, publishing, literature critique, and data analysis. *Prerequisite: Occupational Therapy 409. Occupational Therapy majors only.* Spring semester.

414 Advanced Senior Practicum Research

Variable credit. Taken in conjunction with Occupational Therapy 412, Senior Practicum; for students who desire to participate in developing and implementing a data based research project to be conducted either on campus or at a nearby clinical facility.

420 Sensory Integration

1 credit. Continued study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisite: Biology 201.* Occupational Therapy majors only. Fall semester.

424 Occupational Therapy in School Systems

1 credit. Examination of the school system as a setting for occupational therapy services. Topics will include federal legislation, multi-disciplinary collaboration, roles and functions of occupational therapists, and characteristics which differentiate the school system from other areas of OT practice. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring Semester.

471 Level II Fieldwork—Physical Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of physical rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum scores on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Prerequisites: All academic course work, Occupational Therapy 398, and CPR certification if required by the facility. Occupational Therapy majors only.* Summer or fall semester.

479 Level II Fieldwork – Specialty

No credit. Variable length of Level II Fieldwork experience in area of student's interest. Arranged on an availability basis. *Prerequisites: Occupational Therapy 398 and 471. Occupational Therapy majors only.* Fall semester.

481-488 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

Department of Philosophy

Professor Spiegler

Associate Professor Matteo (*Chair*)

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A major in philosophy requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. Required courses are: Philosophy 105, 115, 180, 201, 240, 310, and 490; two courses from 302, 313, and 320; and a three credit departmental elective.

A minor in philosophy requires: Philosophy 105, 110 or 180, 115, 201, 240 or 310, and three credits from 240, 302, 310, 313, or 320.

105* Introduction to Philosophy

3 credits. (**Cultural Heritage**) An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Staff.

110* Logic and Critical Thinking

3 credits. (**Power of Language**) A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and truth. The nature of inference from premises to conclusion, rules for

deductive and inductive process; informal inferences and fallacies, and theory of definition. *Prerequisite: Mathematics 011 (competency)*. *NOTE: A student who has received credit for English 150 to satisfy the Power of Language requirement may not enroll in Philosophy 110. Philosophy 110 is available only to those students with English 150 placement level.* Staff.

115* Ethics

3 credits. **(Values and Choice)** A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo.

180* Symbolic Logic

3 credits. **(Mathematical Analysis)** Studies the methods of such formal rational procedures as syllogistic, propositional, quantificational, and modal logic, and the informal procedures of inductive reasoning, meaning and definitions, and informal topics including fallacies. *Prerequisite: Mathematics 011 competency.* Staff.

201* Ancient and Medieval Philosophy

3 credits. **(Cultural Heritage)** An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Staff.

240 Modern Philosophy

3 credits. A study of enduring issues in the writings of the 17th and 18th century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Matteo.

310 Contemporary Philosophy

3 credits. A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Staff.

313 Philosophy of Science

3 credits. An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Staff.

320 Philosophy of Religion

3 credits. A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Staff.

371-79 Special Topics in Philosophy

3 credits. A constantly changing specialized study within the field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480-89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Grk 111* Introduction to Classical Greek

3 credits. **(Cultural Heritage)** An introduction to the Attic dialect of classical Greek, including phonetics, manuscript, inflection, and the basic grammar and vocabulary. Translation of selected passages of classical Greek literature, including the Apologia Socratous, from the original Greek into English. Introduction to the culture and literary genres of classical Greece.

Department of Physical Education and Health

Associate Professors Ober (*Chair and Athletic Director*),
Kauffman
Assistant Professor Whitmore
Staff: Drazkowski, Roderick, Schlosser

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social and moral standards, such as sportsmanship, teamwork, tolerance, and other character traits which come from properly conducted play.

All students are required to take three semester hours of physical well being courses, of which at least two must be activity courses. They may be satisfied by any of the courses offered in the Department of Physical Education, except PE 285. No more than five (5) credits of physical well being courses may be counted toward the graduation requirement.

105* Swimming

1 credit. **(Physical Well Being)** Instruction in the basic strokes, survival swimming, and water safety.

115* Physical Fitness and Wellness

1 credit. **(Physical Well Being)** Instruction in cardiovascular-type activities, strength, flexibility, weight control, nutrition, myths, physical activity, injury prevention and rehabilitation, safety, fitness equipment, stress, relaxation, games, exercises, and the consumer-personalizing fitness, aerobic exercises.

118 Water Safety Instruction

1 credit.

120* Aerobics

1 credit. **(Physical Well Being)** Inspiration - perspiration: a diversified

fitness program that will give a complete workout.

125* Tennis

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

130 Bicycling

1 credit.

140* Bowling

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

145* Field Hockey/Volleyball

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

146* Racquetball

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

150* Volleyball

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

161-163* Adapted Physical Education

1 credit. **(Physical Well Being)** Individual activity or collective exercise adapted to needs and abilities of the student.

165* Golf/Badminton

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

175* Archery/Badminton

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

181-184 Self-directed Physical Education Activity

1 credit. For the student who attends Evening Division, studies abroad, or has extenuating circumstances which prohibits the person from meeting regularly scheduled physical education classes. Graded pass/no pass.

185* Basketball

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

190* Horsemanship

1 credit. **(Physical Well Being)** Basic riding positions, balance, equine safety. Discuss equine behavior, care, tack, styles, and management.

194* Skiing

1 credit. **(Physical Well Being)**

195* Soccer

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

285 Physical Education for the Elementary School Child

3 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades.

Department of Physics

Including Earth Science and Engineering

Professor Ranck

Associate Professors Leap, Stuckey, Thompson

Lecturer Ferruzza (*Chair*)

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in science and technical fields. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, all intended to cultivate an ability for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in the department commonly go on to graduate school or to careers in physics, engineering, computer technology, or education.

Programs in Physics

Programs in physics lead to the B.S. degree. The **physics major** is preparation either for graduate school or for the technical job market. The **engineering physics major** is a practical program designed to lead to a technical career in industry. The **chemical physics major** combines study in the fields of physics and chemistry. The **secondary education major in physics** and the **general science education major** (with a concentration in physics), offered in conjunction with the education department, lead to Pennsylvania teacher certification at the secondary level.

Programs in Engineering

Engineering majors in the 3/2 program study for three years at Elizabethtown College and two years at The Pennsylvania State University. Upon completion of the program, the B.A. degree is awarded by Elizabethtown College and the B.S. degree by The Pennsylvania State University. Engineering students in the 3/2 program who maintain a 3.0 cumulative average at Elizabethtown College are guaranteed admission to the College of Engineering at The Pennsylvania State University.

The Elizabethtown College four-year engineering programs, which lead to the B.S. degree, are preparation for technical careers in industry. The **computer engineering major** combines studies of engineering and computer technology, including both hardware and software. The **industrial engineering major** combines

engineering physics with business administration.

Physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 353, 421, 422, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 and 113; and Computer Science 115.

Engineering physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 353, 361, and either 242 or 262; Mathematics 121, 122, 201, 222, and 321; Engineering 118; Computer Science 115; Chemistry 105 and 113; and Economics 101.

Chemical physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 353, 421, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Computer Science 115; and Chemistry 113, 114, 344, and 352.

Secondary education majors in physics are required to take Physics 101, 102, 202, 221, 241, 242, and 321; Earth Science 215; Chemistry 105 and 113; Biology 105, 105L, 108, and 108L; Mathematics 121 and 122; Computer Science 115 or 121; and Education 205, 230, 305, 415, and 473.

General science education majors (with a concentration in physics) fulfill the course requirements listed in the interdisciplinary section of this catalog.

At Elizabethtown College, **engineering students in the 3/2 program** are required to take Physics 101, 102, 202, 221 and 353 or 301 and 302, 241, 242 or 321, 262, and 361; Engineering 118; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 (114 for Chemical Engineering majors) and 113; Computer Science 115; Economics 101; and English 100 or 150, and 382. Students in the 3/2 pre-engineering program are exempt from one three credit course in *either* the Cultural Heritage or Social World area of understanding.

Computer engineering majors are required to take Physics 101, 102, 202, 221, 241, 242, 301, 302, 321, 353, and 361; Mathematics 121, 122, 201, 222, and 321; Computer Science 121, 122, 221, 222, and 332; Engineering 118; Chemistry 113; and Economics 101.

Industrial engineering majors are required to take Physics 101, 102, 202, 241, 321, 361, and either 242 or 262; Engineering 118 and 411; Mathematics 121, 122, 151, 201, and 222; Accounting 305; Computer Science 115; Chemistry 105 and 113; Economics 101 and 102; Business Administration 265, 369, 466, and either 330 or 468; either Business Administration 248 or Mathematics 331; either Business Administration 355 or English 382; and Psychology 105.

Minors in physics are required to take Physics 101, 102, 202, 221, and eight additional credits in physics.

101* Physics I

4 credits. **(The Natural World)** Introduction to the basic concepts of mechanics, classical kinematics and dynamics (linear and rotational motion, force and torque, energy), friction, statics, fluids, kinetic theory of matter. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite or Corequisite: Mathematics 117 or 121.* Fall semester. Prof. Ferruzza.

102 Physics II

4 credits. A continuation of Physics 101. Introduction to the basic concepts of electricity, magnetism, geometrical optics, interference and diffraction, and brief introductions to relativity, quantum theory, atomic and nuclear physics, and elementary particle physics. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

113* Spacetime Physics

4 credits. **(The Natural World)** A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114* Cosmology

3 credits. **(The Natural World)** A non-mathematical study of the origin, evolution, structure, and future of the universe according to various scientific theories. The history of cosmology and its interactions with society. Worldviews associated with nihilism, existentialism, holism, reductionism, the anthropic principles, and the theistic principle. Spring semester. Prof. Stuckey.

202 Physics III

4 credits. An introduction to special relativity and mathematical methods for physicists and engineers. Special relativity topics include time dilation, length contraction and the energy content of matter. Mathematical techniques involved in describing physical phenomena such as waves and energy transfer are studied. Hours: lecture 3, laboratory 3. *Prerequisite: Physics 102; Prerequisite or Corequisite: Mathematics 222.* Spring semester. Prof. Stuckey.

212 Astronomy

4 credits. A study of the structure and evolution of stars, planetary systems, galaxies and the universe. Less familiar astronomical objects such as black holes, quasars, cosmic strings, texture, and wormholes are also studied. Laboratories provide an opportunity to observe planets, stars, clusters, and galaxies; they also provide practical experience in determining astronomical quantities. Hours: lecture 3, laboratory 2. Fall semester. Prof. Stuckey.

216* Quantum Theory and Reality

3 credits. **(The Natural World)** A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Spring semester. Prof. Ranck.

221 Modern Physics (Chemistry 343)

3 credits. Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Staff.

242 Computer Systems Interfacing (Computer Science 333)

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. [Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

262 Statics & Dynamics

3 credits. Equilibria of particles and rigid bodies subject to concentrated and distributed forces, with practical applications to mechanical systems. Topics include unbalanced forces, work and energy, and impulse and momentum. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

301 Mechanics

3 credits. An intermediate course in mechanics. Newtonian mechanics of systems of particles, central forces, oscillations, collisions, rigid-body dynamics, and the Lagrangian and Hamiltonian formalisms for generalized coordinates. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, 321.* Fall semester. Staff.

302 Electromagnetism

3 credits. An intermediate course in electromagnetism, including electro- and magnetostatics and dynamics, Maxwell's equations, macroscopic fields, electromagnetic waves, and special relativity. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Staff.

321 Thermal and Statistical Physics

3 credits. The principles of thermodynamics, including variables and equations of state, the laws of thermodynamics, heat engines, phase transitions, blackbody radiation, heat transfer, and kinetic theory. *Prerequisite: Physics 102.* Fall Semester. Prof. Ferruzza.

353 Advanced Physics Laboratory (Chemistry 351)

4 credits. Experimentation, data acquisition, data analysis, and technical presentations appropriate for the physical and chemical sciences. Emphasis on statistics of physical/chemical experimental data and computer methods of analysis, including electronic laboratory notebooks and computer networks. Hours: lecture 2, laboratory 6. *Prerequisites: Physics 102, Mathematics 121, Computer Science 115.* Fall semester. Prof. Ranck.

361 Engineering Practices Seminar

1 credit. Weekly presentations and discussions by students and faculty of practices, techniques, and topics in the engineering profession. *Prerequisite: permission of instructor.* Fall semester. Prof. Ferruzza.

371-379 Topics in Physics

Variable credits. Topics in physics not covered in other courses. *Prerequisite: Permission of instructor.* Alternating Fall and Spring semesters. Staff.

421, 422 Quantum Physics I, II

3 credits. Quantum theory, including the formalisms of Schrodinger, Heisenberg, and Dirac; the uncertainty principles; quantum solutions to problems in classical mechanics; spin-1/2 systems; scattering theory perturbation theory; atomic physics; Bose-Einstein and Fermi-Dirac statistics for many-particle systems; and the interaction of radiation with matter. *Prerequisites: Physics 221, 301, and 302.* Fall semester, spring semester. Staff.

423 General Relativity

3 credits. An introduction to calculus on manifolds, differential topology, exterior calculus, affine geometry, Riemannian geometry, special relativity, and general relativity with applications to relativistic cosmology. *Prerequisites: Mathematics 122 and 201 or permission of the instructor.* Spring semester. Prof. Stuckey.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of instructor.* Staff.

491, 492 Research I, II

3 credits. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of instructor.* Fall semester, Spring semester. Staff.

Earth Science

ES 105 Field Earth Science

8 credits. An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite: Permission of instructor.* Summer session. Prof. Thompson.

ES 111* The Dynamic Earth

4 credits. **(The Natural World)** An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity and geological time. Hours: lecture 3, laboratory 2. Staff.

ES 112* The Geology of Landscape

4 credits. **(The Natural World)** The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. Prof. Thompson.

ES 215* Meteorology

3 credits. **(The Natural World)** General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Standard weather maps are used. Staff.

ES 215L* Meteorology Laboratory

1 credit. **(The Natural World)** Comprehensive meteorological analysis to include a 3 dimensional structure of the atmosphere. *Prerequisite or corequisite: ES215.* Staff.

ES 371-379 Special Topics in Earth Science

Variable credits. Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite: Permission of instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of instructor.* Prof. Thompson.

Engineering

ENGR 118 Engineering Methods & Graphics

3 credits. Introduction to engineering communication through graphics (projections, pictorials, dimensioning, working drawings, graphs, and spatial relationships). Instruction and practical exercises in computer graphics, including computer aided design (CAD). Hours: lecture 2, laboratory 6. Spring semester. Staff.

ENGR 411 Work Measurement, Quality Assurance, and Human Factors

3 credits. Production management with emphasis on process improvement, work measurement, cost reduction, application of statistical techniques to quality assurance; and ergonomics. *Prerequisite: Business Administration 248; Co- or Prerequisite: Business Administration 369.* Fall semester. Prof. Ferruzza.

Department of Political Science

Professors Gottfried, Selcher (*Chair*)

Associate Professors Beyerlein, McClellan, McDonald

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessperson. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The department encourages students to pursue internship opportunities through its Capital Semester Internship or through those sponsored by other institutions. The department participates in Boston University's International and Washington Internship Programs, as well as the Washington, D.C. based programs offered through the Elizabethtown College Department of Communications.

The major in political science requires the following courses which comprise the principal subfields of the discipline: Political Science 111, 112, 223, 224, 245, 330, 351, and 361, Sociology 331, and twelve credits of political science electives. In addition, at least one semester of a modern foreign language at the 112 level or higher is required. General electives from the other social sciences are encouraged.

For a minor in political science, the student must successfully complete 21 hours of course work, composed of the following political science courses: 111, 112, 223 or 224, 245, and 351 or 361, and two elective 300/400-level courses. For students with specific personal or career interests, the department recommends the following courses: (1) political communications/journalism/ public relations: Political Science 318, 323; (2) law/paralegal/ criminal justice: Political Science 311, 326; (3) international affairs: Political Science 345, 444; (4) political

theory: Political Science 324, 326; (5) public administration: Political Science 471; and (6) business administration: Political Science 366.

Students majoring in political science may elect a *concentration in public administration*. This includes Political Science 471; Business Administration 376 (Decision-Making in the Public Sector); Economics 101; and Sociology 360. Students not majoring in political science may choose a minor in public administration, and should consult the interdisciplinary section of this catalog for further information.

The Department participates in the secondary school certification in social studies program, the forestry and environmental management major, and the environmental science major, offering a political science or a public policy concentration.

105* Western Political Heritage

3 credits. (**Values and Choice**) An introduction to the major political thinkers of the Western political tradition from Plato to Lenin. Justice, equality, rights, freedom, order and community are among some of the ideas to be examined from a variety of critical and historical perspectives. *This course for non-majors only.* Prof. McDonald.

111* American National Government

3 credits. (**The Social World**) Analysis of the development of the U.S. Constitution, the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Profs. Gottfried, McClellan.

112 State and Local Government

3 credits. Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Spring semester. Prof. Beyerlein.

223 History of Western Political Thought I: Ancient and Medieval

3 credits. A survey of major political thinkers from Plato until Marsilio of Padua. Self, politics, nature, order and freedom will be among the topics examined. Prof. McDonald. *Students who have received credit for Political Science 222 may not enroll in this course.*

224 History of Western Political Thought II: Renaissance to the Moderns

3 credits. A survey of major political thinkers in the West and their writings from Machiavelli through Rawls. Self, politics, nature, order, rights and freedom will be among the topics examined. Prof. McDonald. *Students who have received credit for Political Science 222 may not enroll in this course.*

245* International Relations

3 credits. (**Foreign Cultures and International Studies**) Survey of the basic units of analysis, concepts, and principles of global international relations, with emphasis on the formulation and implementation of foreign policy in the context of political, economic, military, and cultural factors. Prof. Selcher.

311 Constitutional Law

3 credits. History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Prof. Gliptis.

313 The American Presidency

3 credits. An examination of the development of the modern presidency as institution, symbol, and policy-maker. Topics to be covered include the nature of presidential power, the institutional presidency, relations with the public and governmental institutions in the U.S., and policy leadership in foreign and domestic affairs. Prof. McClellan.

316 The American Electoral Process

3 credits. Analysis of the process of recruiting, nominating, and electing candidates for national office in the U.S., the major participants in national elections, and the impact of elections on public policy-making. Prof. McClellan.

318 Mass Media and American Politics

3 credits. Analysis of the role and influence of the mass media in American politics, emphasizing the development of the media industry and its relations with government, the political communications process, and the impact of the media on public opinion, elections, and public policy-making. Prof. McClellan.

323 Politics Through Film and Literature

3 credits. An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of politics. Democracy, totalitarianism, social inequality, and the prospects for nuclear war are among some of the topics examined. Prof. McDonald.

324 Modern Ideologies

3 credits. A survey of Marxism, socialism, anarchism, liberalism and conservatism, and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

326 American Political Thought

3 credits. Historical analysis of major American political thinkers from the Puritans to the present with special consideration given to the founding principles of the American republic. Fall semester. Prof. McDonald.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. Prof. Beyerlein.

341 Decision Making Research for Foreign Investment

3 credits. Development and analysis of decision-making processes to be used in foreign investment, with quantitative and qualitative research techniques on macro and micro political and economic factors. *Prerequisite: Mathematics 151.* First offered in fall 1995. Prof. Beyerlein.

345 American Foreign Policy

3 credits. U.S. foreign relations since World War II, within an integrated analytical approach to identify the characteristic processes of decision-making and the patterns of those decisions over the decades. Prof. Selcher.

351 Comparative Governments

3 credits. A comparison of the structures and functions of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislature relations. Fall semester. Prof. Selcher.

361 Public Administration

3 credits. A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

366 Government and Business

3 credits. An examination of relations between the public and private sectors, and of specific public policies toward business such as antitrust,

economic and social regulation, and trade. Prof. McClellan.

370-379 Special Topics

3 credits. Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

444 U.S. Security Policy

3 credits. Analysis of the impact of national security problems on the U.S. government and foreign policy with a focus on various policies for defense and peace. *Prerequisite: Political Science 245 or 345 or permission of instructor.* Prof. McDonald.

471 Capital Semester Internship

6 credits. Applied field experience in politics and public administration for state or local government agencies, the state legislature, and private political organizations. *Prerequisites: Political Science 361 and permission of instructor.* Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

Department of Psychology

Professors Dennis, Ellsworth (*Chair*)

Associate Professor Teske

Assistant Professors Dillon, Rider

Bachelor of Arts

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers the Bachelor of Arts degree. The department also offers a minor in psychology with two tracks, one in general theory and methods; the other in child psychology. The department also offers a concentration for students pursuing the secondary education certification in social studies. See the interdisciplinary section of this catalog.

Courses required for the *bachelor of arts* degree are Psychology 105, 106, 213, 218, 221, 222, 225, 235, 317, 321, 402, 413 or 414, and 425 or 435.

Courses required for the *general psychology minor* track are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/ 400) courses. Students are encouraged to tailor their selection of courses to their personal and career

goals in consultation with a member of the psychology faculty.

Courses required for the *child psychology minor* track are Psychology 105, 225, 333, 334, and six credits of Psychology electives.

105* General Psychology

3 credits. **(The Social World)** An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105.* Spring semester. Prof. Ellsworth.

201* Addictions

1 credit. **(Physical Well Being)** The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. *Prerequisite: Psychology 105 or permission of the instructor.* Staff.

208* Health Psychology

3 credits. **(Natural World)** A study of physiology and neuro-chemistry of pain and stress related illness and those behaviors that contribute to illness. Consideration is given to philosophical questions of the mind-body relationship and the practical question of compliance with treatment regimens and the ethical question of self-determination. Prof. Ellsworth.

213 Research Methods

4 credits. The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105* Fall semester. Prof. Ellsworth.

218 Psychological Statistics

3 credits. Statistics in psychology, including percentiles, standard scores, t-tests, analysis of variance, correlation, regression and prediction. Chi square and other selected procedures. Emphasizes statistical reasoning, as well as application to psychological contexts. *Prerequisite: Psychology 213.* Spring semester. Prof. Dillon.

221 Abnormal Psychology

3 credits. A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite: Psychology 105.* Spring semester. Prof. Dennis.

222 Physiological Psychology

3 credits. Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite: Psychology 105.* Spring semester. Staff.

225 Developmental Psychology

3 credits. Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite: Psychology 105.* Prof. Rider.

235 Social Psychology

3 credits. The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such

topics as self-perception, impression formation, attitudes, social influence, aggression, relationships, inter-personal communication, and environmental transaction. *Prerequisite: Psychology 105.* Fall semester. Prof. Teske.

237* Psychology of Women

3 credits. **(The Social World)** A psychological approach to understanding both the behavior of women and the female experience. Topics include development across the lifespan; language and reasoning; victimization; physical well-being; mental health; and stereotype-based conflicts. Prof. Rider.

252 Psychology of Music

2 credits. Study of acoustics and the Psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

317 Learning

4 credits. Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 213.* Fall semester. Staff.

321 Theories of Personality

3 credits. A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite: Psychology 105 and permission of instructor.* Fall semester. Prof. Teske.

333 Tests and Measurements

3 credits. A study of the theoretical and practical considerations of evaluation and psychological measurement. Emphasis is on test construction and interpretation. *Prerequisite: Psychology 105.* Fall semester. Prof. Dillon.

334 Exceptional Children and Youth

3 credits. A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite: Psychology 225 or permission of instructor.* Spring semester. Prof. Rider.

371-379 Special Topics

Variable credit. Study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite: permission of instructor.* Staff.

401 Counselling Psychology

3 credits. An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites: Psychology 105 and permission of instructor.* Spring semester. Prof. Dennis.

402 History and Systems of Psychology

3 credits. A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite: Psychology 105.* Spring semester. Prof. Dennis.

413 Perception

3 credits. A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 and permission of instructor.* Spring semester. Staff.

414 Memory and Thinking

3 credits. A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project.

Prerequisite: Psychology 213 and permission of instructor. Spring semester. Prof. Ellsworth.

425 Research in Developmental Psychology

3 credits. A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project.

Prerequisites: Psychology 213, 225, and permission of instructor. Fall semester, 1993; Spring semester, beginning 1995. Prof. Rider.

435 Research in Social Psychology

3 credits. A critical examination of selected areas of social psychological research with attention to methodological issues and social relevance.

Students will participate in original research. *Prerequisites: Psychology 213, 235, and permission of instructor.* Fall semester, 1994. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites: Psychology 105 and permission of instructor.* Prof. Dennis.

480-489 Independent Study

Variable credit. This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite: permission of instructor.* Staff.

491-492 Research Practicum

Variable credit. Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement.

Prerequisites: Psychology 213 and permission of instructor. Staff.

Department of Religious Studies

Professors: Clemens, Kraybill,

Puffenberger (*Chair*)

Associate Professor Crocker

Assistant Professor Bucher

Bachelor of Arts

The Department of Religious Studies seeks to broaden the student's liberal education by pursuing creative ventures which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a pluralistic religious milieu. Because of this diversity, the study of religion includes a variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this

light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religious Studies major is designed to serve as a preprofessional foundation for those students wishing to pursue study beyond the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields).

A *major* in Religious Studies consists of twelve courses (36 hours) which includes the three-hour Senior Research Project/Thesis. The program of study must include at least one course from each of the following four categories: biblical studies, ethics and theology, comparative religions, and peace studies. The Department of Religious Studies requires the study of a biblical or modern foreign language at the college level for one full year. It is recommended that students who intend to pursue graduate work take Greek and/or Hebrew.

A *minor* in Religious Studies consists of six courses (18 hours). One's selection must include at least three of the four previously listed categories.

See Interdisciplinary Programs for the details of the minor programs in Peace and Conflict Studies and Anabaptist and Pietist Studies.

101* The Religious Literature of Ancient Israel

3 credits. (**Cultural Heritage**) An introduction to the literature of ancient Israel (i.e., the Jewish Tanakh/Christian Old Testament), focusing on developing skills of historical-critical exegesis. Prof. Bucher.

102* The Religious Literature of Early Christianity

3 credits. (**Cultural Heritage**) An introduction to the literature of early Christianity, primarily that found in the New Testament. The course focuses on the development of the skills of historical-critical exegesis. Prof. Bucher.

105* Forms of Religious Experience

3 credits. (**Values and Choice**) A survey of the basic categories needed for an understanding of religious phenomena. Attention given both to formal expressions and substantive experiencing, with emphasis upon mystical intuition. Myth, symbol, and imagery is of special interest. Prof. Clemens.

165* Introduction to Peace and Conflict Resolution

3 credits. (**Values and Choice**) The foundation course in the peace studies minor. Investigates causes of conflict and alternate modes of resolution, including mediation. Prof. Clemens.

170-179 Special Topics in Religion

3 credits. Courses of an experimental nature offered occasionally at the freshman-sophomore level. Includes such topics as: The Social World of Ancient Israel, The Social World of Early Christianity, etc. Staff.

201 Ancient Near Eastern Religions

3 credits. Introduces the major religious traditions of the ancient Near East: the religions of the Sumerians, Babylonians, Assyrians, Canaanites, Israelites, and Egyptians. It examines the theology, worldview, and religious practices of each of these traditions. Prof. Bucher.

202 Archaeology and the Bible

3 credits. Introduces the basic principles, techniques, and theoretical assumptions of archaeology as practiced in the Middle East. Surveys the

major archaeological discoveries that have shed light on the Bible and biblical history. *Prerequisite: permission of the instructor.* Prof. Bucher.

205 Contemporary Religious Issues

3 credits. A survey of relevant problems and issues on the contemporary American religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism. Staff.

213* Religion and Gender

3 credits. **(Values and Choice)** Introduces students to contemporary theological discussions originating with feminist critiques of religion. Examines the way in which an androcentric perspective has influenced religious language, beliefs, and practices. Prof. Bucher.

215* Social Ethics

3 credits. **(Values and Choice)** The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens.

221 Western Religions

3 credits. **(Foreign Cultures and International Studies)** An introduction to the major religious traditions of the Near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. **(Foreign Cultures and International Studies)** An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shintoism. Prof. Puffenberger.

225 Anabaptist and Pietist Movements

3 credits. A study of the European historical and theological backgrounds of the Anabaptist and Pietist movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Staff.

230 Religion in America

3 credits. Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, as well as the identity and integrity of each separate tradition. Prof. Clemens.

255 Business Ethics

3 credits. A critical analysis of contemporary ethical dilemmas in the context of American business practice. Utilizes normative ethical theory, Kohlberg's model of moral development, and case study analyses as a way to clarify competing ethical principles and to evaluate differing ethical judgments. Prof. Puffenberger.

266 Psychology of Religion

3 credits. **(Social World)** The course explores the relationship between psychology and religion, examining both subjects as examples of cultural systems. Emphasis is placed on reading of classic texts by William James, Sigmund Freud, and Carl Jung. Ways of exploring this subject through experimental methods are considered. Prof. Crocker.

310 Biblical Perspectives on Peace and Justice

3 credits. An examination of the ways in which the values of peace and justice were understood and practiced in the ancient Israelite and early Christian communities. *Prerequisite: Rel 101 or 102 or permission of the instructor.* Prof. Bucher.

315 Issues in Death and Dying

3 credits. A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. Presupposes the notion that the best preparation for life is an in-depth study of its nonexistence. *Prerequisite: permission of the instructor.* Prof. Puffenberger.

317 Sociology of Religion (Sociology 317)

3 credits. An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

335 Renaissance and Reformation History (History 315)

3 credits. A study of the civilization of the Renaissance in Italy, with emphasis on Florence, Erasmus, and the Protestant Reformation of the sixteenth century. Staff.

351 Religion and Violence

3 credits. A study of the reasons for hatred and war as well as a survey of the tension between patriotism and faith as found in the traditional and quasi-religions of our day. Critically examines the ideas of just war, pacifism, non-violent resistance, etc. Prof. Puffenberger.

355 Bio-Ethics

3 credits. A critical examination of the ethical problems that arise in the practice of medicine and the pursuit of biological and medical research. Its case study approach wrestles with the task of determining not only how ethical principles apply, but how to order the principles when not all of them can be followed. Prof. Puffenberger.

357 The Church's Role in Social Change

3 credits. Combines historical and topical consideration of the church's posture toward the state and social change. An applied section views current tense situations in order to arrive at a tenable position on the church's role. Prof. Clemens.

361 Anabaptist and Pietist Groups to 1850 (Sociology 361)

3 credits. Introduces the spectrum of groups: Brethren, Mennonites, Amish, Inspirationalists, Moravians, The Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Notes their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival and revolution. Staff.

362 Anabaptist and Pietist Groups since 1850 (Sociology 362)

3 credits. Examines the processes of adaptation, schism, and withdrawal in these groups as they respond to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren, and Mennonite); defensive and accommodation processes; and contemporary religious expressions. Staff.

363 Pacifism Among Anabaptist and Pietist Groups (Sociology 363)

3 credits. Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government, the pacifist compromises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to civil rights and justice issues. Probes growing interdenominational and international peace discussions and cooperations in the 1980's. Staff.

364 Amish Society (Sociology 364)

3 credits. An introduction to the history, culture, and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Anabaptist and Pietist Groups in Modern Society (Sociology 365)

3 credits. Beginning with a review of sociological theory on modernization, this course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Designed as a capstone experience for the Anabaptist and Pietist Studies minor, this seminar's topics and groups will vary from year to

year. *Prerequisite:* permission of the instructor. Prof. Kraybill.

370-379 Special Topics in Research

3 credits. Courses offered occasionally on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest. Includes such topics as: Liberation Theology; Evangelical Theology; Civil Religion; Esoteric Religions; Utopian Communities; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; Prophecy and Apocalyptic Thought; Wisdom Literature; Islamic Thought; Eastern Scriptures; Biblical Hebrew; New Testament Greek; Jesus and the Gospel Tradition; Mysticism; etc. Staff.

465 Directed Research Project (for Peace Studies minors)

3 credits. A capstone seminar designed to integrate previous work and produce a major research paper. Staff.

470-479 Internship

1-3 credits. Designed to give the individual student the opportunity to pursue an experiential learning experience in an area of major interest under the guidance of a department member. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religious Studies minors by special request. Staff.

490 Senior Research Project/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Social Work

Associate Professor Bergel (*Chair*)

Assistant Professors L. Martin, McFarland

Bachelor of Arts

Social Work is a multi-faceted profession concerned with change both on an individual, community, and national level. Within the framework of a liberal arts tradition, Elizabethtown's social work program prepares the student for entry into professional social work practice. The program also prepares students to enter graduate school. The program is based on an understanding of generalist practice which allows the graduate to choose from a wide range of social service careers.

The *major* in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. The program is accredited by the Council on Social Work Education.

The program provides an extensive opportunity for field experience, beginning with the sophomore year. The major culminates with 600 hours of field instruction during the student's senior year. Field experiences are arranged to meet the student's individual interest. Field

experiences include but are not limited to such areas as child welfare, corrections, mental health, rehabilitation, health care, schools, and aging.

The Social Work Major requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. A short essay describing the applicant's interest in the field of social work.
3. Formal admittance to Elizabethtown College.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

The *Social Work Major* requires the following courses: Biology 105, Sociology 101, 220, Psychology 105, Political Science 111, Economics 101, Mathematics 151, Modern Language 112, Social Work 151, 180, 233, 280, 330, 367, 368, 369, 401, 470, 471, and 498.

151* Social Welfare Issues in Contemporary Society

3 credits. (**The Social World**) The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Six hours of volunteer experience are required. Spring semester. Profs. Martin, McFarland.

180* Interpersonal Helping Skills

3 credits. (**The Social World**) Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

233* Human Behavior in the Social Environment

3 credits. (**The Social World**) A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and the implications for human service delivery. Fall semester. Prof. McFarland.

280 Rural & Urban Social Welfare Systems

3 credits. A comparison of urban and small town rural areas. The development and organization of rural and urban communities; their network of services designed to address community, family, and individual problems; community development and administration of social service programs. Volunteer experience required. *Prerequisite:* Social Work 151. Spring semester, Prof. Bergel.

330 Methods of Social Work Research (Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or co-requisite:* Mathematics 151. Fall semester. Staff.

339 Human Sexuality

3 credits. A study of socio-sexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected issues. Prof. McFarland.

344 Aging: Social Response and Implications

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services, needs and institutions related to the elderly. Field trips to social service agencies. Prof. McFarland.

355 Women in Society

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Prof. Bergel.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Prof. Martin.

366 Addiction and Society

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 180. Social Work majors only.* Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367. Social Work majors only.* Spring semester. Staff.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Social Work majors only.* Spring semester. Prof. Martin.

371-379 Special Topics in Social Work

3 credit. Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social economic, and political systems. *Prerequisites: Political Science 111, Economics 101.* Fall semester. Prof. Martin.

470 Introductory Field Instruction

3 credits. Supervised field instruction for a least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. *Social Work majors only.* Fall semester. Prof. Martin.

471 Advanced Field Instruction

12 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner. *Prerequisite: permission of instructor; co-requisite: Social Work 498. Social Work majors only.* Spring semester. Prof. Martin.

481-489 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite: Social Work 470; co-requisite: Social Work 471. Social Work majors only.* Spring semester. Prof. Bergel.

Department of Sociology and Anthropology

Professor Kraybill

Associate Professor Lehr (*Chair*)

Assistant Professor Wheelersburg

Visiting Instructor Kanagy

Bachelor of Arts in Sociology-Anthropology

The program of this department provides for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social services, law, and business administration. Some move directly into careers in personnel work, social research, adult and juvenile probation, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers a major in sociology-anthropology that leads to a bachelor of arts degree. The department also offers minors in sociology and in anthropology.

The major in sociology/anthropology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities.

The department also participates in the secondary education certification in social studies offering sociology-anthropology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A sociology-anthropology major requires Sociology 101, 204, 302, 330, 331, 364, and 498; Anthropology 111, 201, and 360; an Anthropology elective; and one other elective course in the department.

The Anthropology minor requires 18 credit hours which include: Sociology 101; Anthropology 111 and 201; two courses selected from Sociology 204, 364, and Anthropology 360; and one course from Anthropology 306, 307, or 308.

The Sociology minor requires 18 hours of course work including Sociology 101, 204, 302, 330, and two Sociology electives.

Sociology

101* Discovering Society

3 credits. (**The Social World**) An introductory course to the social world which presents an understanding of society and its impact on the individual. Using the sociological perspective, this course offers students an understanding of social reality, processes, and explanations. Staff.

204* Population and Global Issues

3 credits. (**Social World**) Critical analysis of scholarly and popular press views about the relationship of human population processes (fertility, mortality, migration) to major global social issues (e.g., poverty, health/disease, food/housing, shortages, environmental destruction) from the perspectives of sociology/social demography. Prof. Kanagy.

215 Criminology

3 credits. Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Alternate fall semesters. Staff.

220 Race and Ethnic Relations

3 credits. Study of racial and cultural minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Prof. Kanagy.

301 Social Issues

3 credits. A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Staff.

302 Sociological Theory

3 credits. An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite: Sociology 101*. Prof. Lehr.

305 Marriage and the Family

3 credits. A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 Sociology of Religion

3 credits. An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

330 Methods of Social Research

(*Political Science 330, Social Work 330*)

3 credits. Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisite: Sociology 101*. Fall semester. Staff.

331 Social Statistics

3 credits. Basic introduction to the study of statistical procedures of social research and analysis, with emphasis on reasoning with data. *Prerequisite: Sociology 330 or Political Science 330 or Social Work 330*. Spring semester. Staff.

342 Modern Corrections

3 credits. An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Alternate spring semesters. Staff.

358 Sociology of War and Peace

3 credits. A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Staff.

360 Organizations in Modern Society

3 credits. An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Staff.

361 Anabaptist and Pietist Groups Prior to 1850

3 credits. Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Staff.

362 Anabaptist and Pietist Groups Since 1850

3 credits. Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Staff.

363 Pacifism among Anabaptist and Pietist Groups, 1525-1985

3 credits. Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government; the pacifist compromises of Moravians while protecting Indian converts; and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Fall semester. Staff.

364 Amish Society

3 credits. An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

365 Hutterites, Mennonites, and Brethren in Modern Society

3 credits. Beginning with a review of sociological theory on modernization, the course will focus on the current strategies of present-day Anabaptist and Pietist groups to cope with the pressures of modernity. An overview of the contemporary religious beliefs and social organization of the groups will be presented as well as current research issues in the field. Prof. Kraybill.

371-379 Special Topics in Sociology

3 credits. Readings and discussion of topical areas of sociology. Topics may include, but not be limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of instructor*. Staff.

481-489 Independent Study in Sociology

Variable credit. Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of instructor.* Spring semester. Staff.

Anthropology

111* Understanding Human Cultures

3 credits. **(Foreign Cultures and International Studies)** A comprehensive survey of the peoples and cultures of the world with special emphasis upon four interrelated cultural systems: knowledge, technology, social organization, and ideology. Staff.

201* Physical Anthropology

3 credits. **(Natural World)** An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. *Prerequisite: one 100-level Natural World course.* Fall semester. Staff.

202 Cultural Anthropology

3 credits. An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Spring semester. Prof. Lehr.

306 Indians of North America

3 credits. A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the develop-

ment of modern aboriginal lifestyles, and contemporary social problems. Staff.

307 Peoples and Cultures of Africa

3 credits. Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. Theoretical perspectives on sociocultural change and a consideration of the mechanisms, patterns, and strategies of change. Prof. Wheelersburg.

371-379 Special Topics in Anthropology

3 credits. Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Staff.

Spanish

See Department of Modern Languages, page 50.

Theater

See Department of Fine and Performing Arts, page 40.



A scene from Shakespeare's *Much Ado About Nothing*.

Interdisciplinary Programs

Premedical and Other Health Professions Programs

James L. Dively, *chair, Health Professions Advisory Committee*

Members: John A. Campbell, Jr., Jack L. Hedrick, Frederic E. Hoffman, Zoe G. Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions, schools, and/or students. *The biology premedical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 19. A second route is the *bachelor of science degree* in biochemistry (see page 19). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown College, he or she will follow a curriculum similar to that outlined below, with minor variations depending upon several factors, such as the starting level in English and mathematics. After completion of the freshman year, students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Five faculty members are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into schools of medicine; (2) to advise students on registration and preparation for medical school admissions tests; (3) to assist students in the preparation and submission of applications to medical schools; (4) to draft a composite letter of evaluation and endorsement for worthy candi-

dates and to forward this information to the appropriate medical school admissions committees; (5) to offer assistance in preparing for medical school interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical school placement for advising and administrative purposes.

The premedical student should introduce him or herself to the Health Professions Advisory Committee early in the freshman year and formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. Forms for this registration are available from Dr. Dively. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during the spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During April of the junior year, the Committee will hold interviews with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. The Committee will also use information from the student's registration form and from letters of recommendation and endorsement that the student has solicited from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical school admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process him or herself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that premedical students notify the Committee of changes in status of their applications so that the Committee can plan for this important stage of the

admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

Representative First-Year Courses

Credits Fall Semester

3	Freshman Seminar
4	Biology 111
4	Chemistry 113
3	Power of Language*
4	Mathematics 121**

Credits Spring Semester

4	Biology 112
4	Chemistry 114
4	Foreign Cultures/International Studies**
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs or a master of science degree in physical therapy from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, cytogenetics, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, nursing, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology major, and the pre-allied health courses. If

accepted, the student then spends two or more years at Thomas Jefferson University in Philadelphia. After completing sufficient credits so that the total with those earned at Elizabethtown College will be at least 125, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science or master of science in one of the allied health areas.

Admission to Thomas Jefferson University is by application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

Students are not limited to Thomas Jefferson University programs. Other Allied Health programs at other institutions of higher education may be used by the student for transfer of credit back to Elizabethtown College. However, these programs need to be approved by the Biology department and by the Registrar prior to the transfer of credit.

For additional details, the student should confer with Dr. J. Robert Heckman of the Biology Department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a Bachelor of Science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's Core Program in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program requirements and earning at least 101 credits before transferring to Duke. The student spends at least two years at Duke's School of the Environment. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional two or three semesters, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate Record Examination scores, letters of recommendation, and interviews. To insure acceptance, an applicant's G.P.A. should be at least 3.5.

There are variations of the schedule herein described. For additional details, the student should confer with Prof. Ronald L. Laughlin of the Department of Biology.

Majors must complete all Elizabethtown College Core Program requirements. Within the Core areas, the following courses should be taken:

Mathematical Analysis (three hours): Mathematics 151 or 121. If 151 is not taken for core, it is strongly recommended as an elective. If 121 is not taken for core, Math 117 will satisfy the calculus requirement, but not core.

Natural World (eight hours): Biology 111 and Chemistry 101.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 hours in the other two areas, with at least six hours in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313, 313L, 321; two courses from Biology 215-215L, 235, 331, 332, and 347; and Chemistry 101, and 105. Minor concentration recommendations are Biology 111, 112, 331; if only six hours are elected, they should be Biology 111 and 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 101, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 101, Computer Science 120, Business Administration 265. Economics 101 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political Science 111, 112, 361, 366, 471. Minor concentration recommendations are Political Science 361, 471; if only six hours are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology: a minimum of 24 hours in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry 101*, 105*; Physics 101*, 102; two courses from Earth Science 111, 112, 215 or Physics 212; Mathematics 101 and 121, or 151 and 117 or 121; and Education 205, 230, 305, 310, 415, 473.

Chemistry: a minimum of 24 hours in chemistry which must include Chemistry 113 114, 213, 214; and eight hours from among Chemistry 116, 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology 111*, 112; two courses from Earth Science 111, 112, 215 or Physics 212; Physics 101*, 102; Mathematics 101, 121, 122; and Education 205, 230, 305, 310, 415, and 473.

Physics: a minimum of 24 hours in physics which must include Physics 101, 102, 202, 221, 241, 321, and 353; one additional course in physics (except 212) or engineering; Biology 105*-105L*, and either 106*-106L* or 108*-108L*; Chemistry 101*, 105*; two courses from Earth Science 111, 112, 215 or Physics 212; Mathematics 101, 121, 122; and Education 205, 230, 305, 310, 415, and 473.

*Count towards **Natural World** Core Program requirement.

For additional details the student should confer with Dr. Frederic Hoffman of the Department of Biology.

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

Requirements for the social studies major are: Students must take one 24-hour major, and two courses in each of the four cognate areas. These two courses in each of the four cognate areas may duplicate courses in the core areas. All students must take the professional education sequence Education 205, 230, 305, 415, and 473. Consultation with your advisor is suggested for appropriate courses in the subject matter areas. The student must have a 2.5 G.P.A. for admission to the certification program.

Economics: The 24-hour major must include Economics 101, 102, and 18 elective hours in economics.

History: The 24-hour major must include History 115, 201, 202, 390, one European history course beyond 115; one non-United States, non-European history course, and six elective hours in history.

Political Science: The 24-hour major must include Political Science 111, 112, 223 or 224, 245, 330, 351, and six elective hours in political science.

Psychology: The 24-hour major must include Psychology 105, 106, 213, 221, 225, 235, 321, and one elective in Psychology.

Sociology/Anthropology: The 24-hour major must include Sociology 101, 204, 302, and 330; Anthropology 111; and nine hours planned in consultation with and approved by the social studies advisors in the Departments of Sociology-Anthropology and Education.

Anabaptist and Pietist Studies Minor

The interdisciplinary minor in Anabaptist and Pietist Studies consists of 18 credit hours. The curricular model incorporates three types of courses: a required introductory course (3 hours.); elective courses in a variety of disciplines (12 hours.); and a capstone seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

The introductory course (Rel 225) is designed to orient students to the European historical and theological roots of the Anabaptist and Pietist movements. The elective courses, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which draws on the resources of three academic disciplines. The *capstone course* (Rel/Soc 365) is a seminar experience which requires students to integrate and synthesize the insights from several disciplines in a major research writing project. At least two faculty members from differing academic disciplines will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. Program advisor: Dr. William V. Puffenberger.

Minor Requirements

A. One *required* introductory course (3 hours.)

Rel 225	Anabaptist and Pietist Movements
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B. Four *elective* courses from the following list (12 hours.)

Rel 230	Religion in America
Rel 335/His 315	Renaissance and Reformation History
Rel/Soc 361	Anabaptist and Pietist Groups to 1850
Rel/Soc 362	Anabaptist and Pietist Groups since 1850
Rel/Soc 363	Pacifism Among Anabaptist and Pietist Groups
Rel/Soc 364	Amish Society

C. One *required* capstone research seminar (3 hours.)

Rel/Soc 365	Anabaptist and Pietist Groups in Modern Society
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Peace and Conflict Studies Minor

The interdisciplinary minor in Peace and Conflict Studies consists of 18 credit hours. The curricular model incorporates three types of courses: required introductory courses (6 hours.); elective courses in a variety of disciplines (9 hours.); and a capstone, integrative seminar research project (3 hours.). Courses in the minor may not count toward a student's academic major.

In order to provide students with adequate conceptual tools and conciliation skills, the program of study is multidisciplinary in both method and instruction. The *introductory courses* orient students to basic concepts and approaches in Peace and Conflict Studies as well as the history of nonviolence. The *elective courses*, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which taps the analytic resources of various academic fields. The *capstone course elective* requires students to synthesize concepts and knowledge from several disciplines in order to address a research problem of practical or theoretical interest. At least two faculty members, representing different academic fields, will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies. Program advisor: Dr. William V. Puffenberger.

Minor Requirements

- A. Two *required* introductory courses (6 hours.)

Rel 165	Introduction to Peace and Conflict Resolution
Hi 221	History of Nonviolence
- B. Three *elective* courses from the list below, or other approved courses (9 hours). No more than two elective courses shall be chosen from any one department. At least two of the elective courses must be taken outside the student's major department.

Com 301	Interpersonal Communication
PS 245	International Relations
PS 345	American Foreign Policy
Psy 235	Social Psychology
Rel 310	Biblical Perspectives on Peace and Justice
Rel 351	Religion and Violence
Rel 357	The Church's Role in Social Change
Soc 358	Sociology of War and Peace
Soc/Rel 363	Pacifism Among Anabaptist and Pietist Groups

- C. A required *capstone* seminar designed to integrate previous work and culminate in a major research paper.

Rel 465

Directed Research Project

International Studies Minor

Dr. Wayne A. Selcher (*Director of International Studies and Program Advisor*)

The International Studies Minor comprises a cluster of foreign culture, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are making themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The Department of Business has an International Business major. Details of this option can be obtained from the Business department faculty.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

The structure of the minor consists of:

1. *Foreign language competency*: 6 semester hours in oral and written expression beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level I+ on the ACTFL/ETS scale.
2. *Three required foundation courses* (9 hours):

An 111	Understanding Human Cultures
Ec 307	International Economics* or
Ec 311	Economic Development or
Ec 312	International Political Economy
	(only one economics course may be selected)
PS245	International Relations
3. *Four elective courses* (12 hours) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 251	Cross Cultural Understanding
BA 317	International Marketing
BA 371	International Management
Com 372	International Communications
Ec 307	International Economics*

Ec 308	Comparative Economic Systems*
Ec 311	Economic Development
Ec 312	International Political Economy
Fr/Ge/Sp 311	Making of Modern Society
Fr/Ge/Sp 312A & 312B	Languages for the Professions
Hi 205	Modern Far East
Hi 216	Modern Britain
Hi 218	Europe in the Twentieth Century
Hi 220	History of the Soviet Union
Hi 227	History of Africa
Hi 323	History of China
Hi 324	History of Japan
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
PS 345	American Foreign Policy
PS 351	Comparative Governments
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 100 or 101

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The director of International Studies (Professor Wayne Selcher) will help the student with course selections. With the exception of courses specifically required for the major (e.g., Political Science 245 for Political Science majors), courses in the minor must be selected from core courses or free electives. Completion of the minor is indicated on a student's transcript.

Pre-Law Program

Chairman of the Pre-law Committee: H. Herbert Poole (*History*).

Members of the Committee: Paul Gottfried (*Political Science*), George A. Gliptis (*Business*), Louis F. Martin (*English*), Anthony M. Matteo (*Philosophy*), E. Fletcher McClellan (*Political Science*), W. Wesley McDonald (*Political Science*), Richard L. Mumford (*History*).

Because the training of a pre-law student may be accomplished in almost any academic discipline, such as English, History, Political Science, Philosophy, or Business, a committee has been established to assist the pre-law student during his undergraduate years.

The Pre-Law Committee works with the pre-law student and the student's major advisor to ensure that a reason-

able and sound course of study is followed that is acceptable for entry into a school of law. The committee aids the student in selecting a suitable school, and advises the applicant on the registration and the preparation for the Law School Admissions Test (LSAT). The committee guides the preparation and submission of applications and supervises the requests for letters of recommendation for worthy candidates.

In order to create the most effective curriculum, the pre-law student should introduce himself to the Pre-Law Committee early in the freshman year to discuss future course scheduling and long-term plans.

The Pre-Law Committee also supervises the activities of the Law Club and works closely with the campus Forensic Team; both activities are highly recommended for pre-law students.

Over the years, the members of the committee have maintained a liaison with the schools of law which are most frequently attended by Elizabethtown College graduates. These include: American University, Antioch College, University of Baltimore, Boston University, University of Bridgeport, Case Western Reserve University, University of Dayton, University of Delaware, Dickinson College, Duke University, Duquesne University, Fordham University, Georgetown University, George Washington University, Hofstra, University of Miami, University of Nebraska, New York Law School, New York University, Ohio Northern University, Oklahoma, Pace, University of Pennsylvania, Pepperdine, Pittsburgh, Rutgers, Saint Mary's University of San Antonio, Syracuse, Temple, University of Toledo, Valparaiso, Vermont Law School, Villanova, Washington and Lee, and William and Mary.

Public Administration Minor

The public administration minor provides knowledge, skills, and experience to students desiring a career in public service. Combined with an appropriate academic major, the minor prepares students for careers in public management, public policy analysis and administration, legislative affairs, urban and regional planning, international development administration, and related fields. In particular, the minor is designed to provide a necessary background for students who intend to pursue graduate study in public affairs.

The requirements of the minor reflect the interdisciplinary nature of governmental activity. The courses introduce the student to: (1) the political, economic, and organizational environment of the public administrator; and (2) the major activities, responsibilities, and roles of public administrators. An important component of the minor is participation in the Capital Semester Internship Program (Political Science 471), which furnishes internship opportunities with state and local government agencies.

The minor is available to all students except political science majors, who may elect a concentration in public administration within the major. The required courses in the minor are: Economics 101; Political Science 111 or 351, 361, and 471; Business Administration 376; and Sociology 360. Students interested in working for federal, state, or local governments in the United States should take Political Science 111, while students who want to pursue public-sector work outside the U.S. should take Political Science 351. With the exception of Economics 101, courses in the minor may not count toward a student's academic major. For additional information and assistance, contact Dr. E. Fletcher McClellan of the Political Science Department.

Human Services Minor

A minor in Human Services, consisting of a minimum 18 credits, is available. The minor provides students the knowledge, values, and skills to explore society's social problems and the intricate social welfare system designed to assist people in need. It also provides the student with an overview of human behavior, social problems, and the development of American social welfare institutions. All students, except Social Work majors, may pursue this minor.

Minor Requirements (12 hours):

SW 151	Social Welfare Issues in Contemporary Society
SW 180	Interpersonal Helping Skills
SW 233	Human Behavior in the Social Environment
SW 280	Rural and Urban Social Welfare Systems

Also (6 hours):

A minimum of six elective credits of the following courses (three credits of which must be outside of the Department of Social Work):

SW 339	Human Sexuality
SW 344	Aging: Social Response and Implication
SW 355	Women in Society
SW 357	Child Welfare
SW 366	Addiction and Society
SW 401	State and National Social Welfare Systems
Mu 353	Music Therapy Techniques (2 credits)
Psy 334	Exceptional Children and Youth
Psy 401	Counseling Psychology
Soc 305	Marriage and the Family
Soc 342	Modern Corrections
PS 361	Public Administration
OT 320	Health Care Systems
OT 325	Sign Language (2 credits)
BA 376	Decision Making for the Public Sector

All courses receive three credits awarded upon successful completion, unless otherwise noted.



Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Richard R. Crocker, *Dean of College Life and Associate Professor of Religious Studies* (1990)
B.A., M.A., Brown University; M.Div., Ph.D., Vanderbilt University (1990)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; LL.D., Elizabethtown College (1952-1984)

Louise B. Black, *Associate Professor of English Emerita*
B.S., Elizabethtown College; M.S., Temple University (1968-1988)

I.L. Bossler, *Professor of Mathematics Emeritus*
B.S., Ursinus College; M.S., Purdue University (1959-1989)

Stanley Bowers, *Associate Professor of Education Emeritus*
B.S., Millersville State College; M.Ed., Temple University (1965-1990)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Robert D. Dolan, *Associate Professor of Mathematics Emeritus*
B.S., California State College; M.A., West Virginia University (1964-1992)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1945-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Universite, University of Paris (1966-1973)

Robert B. Garrett, *Assistant Professor of Health and Physical Education Emeritus*
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967-1988)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

Henry M. Libhart, *Professor of Art Emeritus*
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967-91)

J. Henry Long, *Associate Professor of Sociology Emeritus*
B.S., Elizabethtown College; B.D., D.D., Bethany Theological Seminary (1969-1988)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Rollin E. Pepper, *Professor of Biology Emeritus*
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964-1990)

Elisabeth D. Shaw Russell, *Associate Professor of English Emerita*
B.A., M.A., Oxford University (1969-1988)

Carl N. Shull, *Professor of Music Emeritus*
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961-1988)

Harry L. Simmers, *Associate Professor of Music Emeritus*
B.S., Bridgewater College; M.M., American Conservatory of Music (1966-1990)

Donald P. Smith, *Assistant Professor of Physical Education Emeritus*
B.S., University of Mississippi (1954-64, 1972-88)

Royal E. Snavely, *Counselor Emeritus*
M.A., Ohio State University (1965-1990)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Martin O. L. Spangler, *Professor of Chemistry Emeritus*
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966-1993)

Stanley T. Sutphin, *Professor of Philosophy Emeritus*
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963-1993)

Robert S. Young, *Director of Special Gifts Emeritus* (1950-1984)

Robert E. Ziegler, *Professor of Science Education Emeritus*
B.A., Bridgewater College; M.R.E., Bethany Seminary; M.S., Ph.D., University of Wisconsin (1966-1988)

The remaining faculty member listings indicate two dates. The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)

Paul M. Dennis, *Professor of Psychology* (1992)
B.A., Bowdoin College; M.A., Ph.D., New School for Social Research (1968)
Sabbatical leave, Fall 1993

- James L. Dively**, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State University (1973)
- J. Thomas Dwyer**, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania (1960)
- Delbert W. Ellsworth**, *Professor of Psychology* (1988)
A.B., University of California; M.A., San Francisco State College; Ph.D., University of California (1970)
- John F. Gelson**, *Sara Lodge Distinguished Visiting Professor of Business* (Fall 1993)
B.S., University of Notre Dame (1993)
- Paul Gottfried**, *Professor of Humanities* (1989)
A.B., Yeshiva University; M.A., Ph.D., Yale University (1989)
- John F. Harrison**, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D., Bryn Mawr College (1967)
- J. Robert Heckman**, *Professor of Biology* (1978)
B.S., Elizabethtown College; M.Ed., Millersville State College; Ph.D., Pennsylvania State University (1964)
- Jack L. Hedrick**, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University of Pittsburgh (1963)
- Frederic E. Hoffman**, *Professor of Biology, Clinical Professor in Science Education*, (1982)
B.A., M.S., Ph.D., Syracuse University (1969)
- Otis D. Kitchen**, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwestern University (1965)
- Donald E. Koontz**, *Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Pennsylvania State University; Ed.D., Temple University (1961)
- Donald B. Kraybill**, *Professor of Sociology* (1984) and *Director of the Galen and Jessie B. Young Center for the Study of Anabaptist and Pietist Groups*.
B.A., Eastern Mennonite College; M.A., Ph.D., Temple University (1971)
- Carroll L. Kreider**, *Professor of Business* (1989)
B.S., Elizabethtown College; M.Ed., Pennsylvania State University (1969)
- J. Kenneth Kreider**, *Professor of History* (1972)
A.B., Elizabethtown College; M.A., Ph.D., Pennsylvania State University (1964)
- Robert C. Moore**, *Professor of Communications* (1989)
B.S., Edinboro State College; M.S., Clarion State College; Ed.D., West Virginia University (1983).
- Richard L. Mumford**, *Professor of History and Clinical Professor in Social Studies Education* (1971)
A.B., University of Pennsylvania; M.Ed., Ph.D., University of Delaware (1965)
Sabbatical leave, Spring 1994
- Zoe G. Proctor**, *Professor of Chemistry and Director of Medical Technology Program* (1970)
B.S., Elizabethtown College; M.S., Bucknell University (1959)
- William V. Puffenberger**, *Professor of Religion* (1974)
B.A., Bridgewater College; B.D., Bethany Theological Seminary; Ph.D., Boston University (1967).
- John P. Ranck**, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D., Princeton University (1963)
- D. Paul Rice**, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D., Temple University (1963)
- Carmine T. Sarracino**, *Ralph W. Schlosser Professor of English* (1991)
B.A., Rhode Island College; M.A., Ph.D., University of Michigan (1973)
- Charles D. Schaeffer, Jr.**, *A.C. Baugher Professor of Chemistry* (1991)
B.A., Franklin and Marshall College; Ph.D., State University of New York at Albany (1976) Sabbatical leave, Spring 1994
- Wayne A. Selcher**, *College Professor of International Studies and Director of the International Studies Program* (1982)
A.B., Lebanon Valley College; M.A., Ph.D., University of Florida (1969)
- Ronald L. Shubert**, *Professor of Mathematics* (1973)
B.S., Elizabethtown College; M.A., University of Kansas; Ed.D., Pennsylvania State University (1964)
- Bela Vassady, Jr.**, *Horace E. Raffensperger Professor of History* (1983)
B.S., Pennsylvania State University; M.A., Ph.D., Temple University (1971)
Sabbatical leave, Spring 1993
- Thomas R. Winpenny**, *Professor of History* (1981)
B.A., M.A., Pennsylvania State University; Ph.D., University of Delaware (1968)

Associate Professors

- Jill Sunday Bartoli**, *Associate Professor of Education* (1990)
B.A., M.A., University of Kentucky; M.Ed., Shippensburg State College; Ph.D., University of Pennsylvania (1990)
- Vivian R. Bergel**, *Associate Professor of Social Work* (1993)
B.A., M.S.W., West Virginia University; Ph.D., University of Maryland at Baltimore (1987)
- Cynthia Beyerlein**, *Associate Professor of Public Administration* (1992)
B.S., Manchester College; M.B.A., St. Francis College; M.S. Widener University (1985)
- Paula R. Boothby**, *Associate Professor of Education* (1990)
A.B., Kalamazoo College; M.A., Western Michigan University; Ed.D., University of North Dakota (1990)
- Uldis Daiga**, *Associate Professor of Modern Languages* (1973)
B.S., University of North Carolina; M.A., Temple University (1965)
- Darrell R. Douglas**, *Associate Professor of Music* (1972)
B.S., University of Minnesota; M.A., Arizona State University; D.M.A., University of Southern California (1972)
- Martha A. Eppley**, *Associate Professor of Economics* (1971); *Associate Dean of the Faculty and Registrar* (1979)
B.S., Elizabethtown College; M.B.A., Indiana University (1964)
- Hugh G. Evans, Jr.**, *Associate Professor of Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania State University (1968)
- Boyd Fox**, *Associate Professor of Education* (1973)
B.S., M.S., Ed.D., Utah State University (1970)
- E. Margaret Gabel**, *Assistant to the Director of the Library and Head Cataloguer*
B.S., Kutztown State Teachers College; M.S.L.S., Syracuse University
- George A. Gliptis**, *Associate Professor of Business* (1972)
B.S., J.D., University of Virginia (1970)
- Suzanne Schmidt Goodling**, *Associate Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury College (1964)
- Maurice R. Hoppie**, *Associate Professor of Economics* (1987)
B.A., Knoxville College; M.S., Ph.D., University of Tennessee (1980)
- Jacqueline L. Jones**, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign, OTR/L (1987)
- Yvonne E. Kauffman**, *Associate Professor of Physical Education* (1990)
B.S., Bridgewater College; M.Ed., West Chester State College (1966)
- John E. Koontz**, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)

Ronald L. Laughlin, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)

Thomas R. Leap, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)

R. Bruce Lehr, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)

Anthony M. Matteo, *Associate Professor of Philosophy* (1991)
B.A., M.A., LaSalle College; Ph.D., Temple University (1986)

E. Fletcher McClellan, *Associate Professor of Political Science* (1989)
B.A., Franklin and Marshall College; M.A., East Tennessee State University; Ph.D., The University of Tennessee (1982)

W. Wesley McDonald, *Associate Professor of Political Science* (1986)
B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)

Robert K. Morse, *Associate Professor of Mathematics* (1971)
B.S., Franklin and Marshall College; M.A., Temple University (1968)

Stanley R. Neyer, *Associate Professor of Business* (1972)
B.S., Elizabethtown College; M.B.A., Shippensburg State College; C.P.A. (1964)

D. Kenneth Ober, *Associate Professor of Physical Education and Director of Athletics* (1972)
B.S., M.S., West Chester State College (1964)

Frank P. Polanowski, *Associate Professor of Biology* (1981)
B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)

H. Marshall Pomroy, *Associate Professor of Business* (1971)
B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)

H. Herbert Poole, Jr., *Associate Professor of History* (1982)
B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969)

Raymond R. Reeder, *Associate Professor of Chemistry* (1973)
B.S., Case Institute of Technology; Ph.D., Brown University (1969)

John C. Rohrkemper, *Associate Professor of English* (1987)
B.A., M.A., Ph.D., Michigan State University (1981)

James G. Shaner, *Associate Professor of Communications* (1993)
B.A., Marquette University; M.A., Ph.D., University of Missouri-Columbia (1992)

Donald E. Smith, *Associate Professor of Communications* (1973)
B.S., M.S., State University of New York College at Geneseo (1969)

John W. Stites, *Associate Professor of Music* (1976)
B.S., Manchester College; M.M., Wayne State University (1968)

Richard G. Stone, *Associate Professor of Business* (1987)
B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut; Ph.D., Temple University (1987)

William M. Stuckey, *Associate Professor of Physics* (1993)
B.S., Wright State University; M.S., Ph.D., University of Cincinnati (1988)

John A. Teske, *Associate Professor of Psychology* (1990)
B.A., Indiana University; M.A., Ph.D., Clark University (1986) Sabbatical leave, Spring 1994

Glenn H. Thompson, Jr., *Associate Professor of Earth Science* (1973)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)

Sharon R. Trachte, *Associate Professor of Modern Languages* (1993)
B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)

Randolph L. Trostle, *Associate Professor of Business* (1984)
B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)

Barbara C. Tulley, *Associate Professor of Computer Science* (1989)
B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)

Hans-Erik Wennberg, *Associate Professor of Communications* (1992)
B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Assistant Professors

Kurt M. Barnada, *Assistant Professor of Modern Languages* (1988)
B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University (1988)

David A. Bauman, *Assistant Professor of Education* (1988)
B.A., Goshen College; M.Ed., Millersville University (1988)

Morteza Bina, *Assistant Professor of Computer Science* (1990)
B.S., Arya Mehr University of Technology; D.E.A., Institut National Polytechnique de Grenoble; M.S., Bowling Green State University; Ph.D., Universite de Technologie de Compiègne (1990)

Terry Blue, *Assistant Professor of Education* (1990)
B.A., Juniata College; M.A., Temple University; Ph.D., Pennsylvania State University (1990)

Christina A. Bucher, *Assistant Professor of Religion* (1988)
A.B., Elizabethtown College; M.A.Th., Bethany Theological Seminary, Ph.D., Claremont Graduate School (1988)

Carolyn F. Dillon, *Assistant Professor of Psychology, part-time* (1992)
B.A., M.A., Ph.D., University of Delaware (1992)

J. Sue Dolan, *Assistant Professor of Business* (1980)
B.S., Elizabethtown College; M.Ed., Shippensburg State College (1974)

Sharon K. Farley, *Assistant Professor of Occupational Therapy* (1991)
B.S., Elizabethtown College; M.S., Towson State University; OTR/L (1987)

Maria H. Frawley, *Assistant Professor of English* (1992)
B.A., Bucknell University; M.A., Ph.D., University of Delaware (1992)

Milton Friedly, *Assistant Professor of Art* (1990)
A.A., Northwest Community College; B.F.A., Arizona State University; M.F.A., University of Wyoming (1987)

Craig Hergert, *Assistant Professor of English* (1990)
B.A., Concordia College; M.A., University of Missouri-Columbia; Ph.D., Bowling Green State University (1990)

Patricia A. Hill, *Assistant Professor of Business* (1988)
B.A., Gettysburg College; M.B.A., University of Baltimore (1988) Junior leave, 1993-94

Harold Hoy, *Visiting Assistant Professor of Business* (part-time)
B.S., The Pennsylvania State University; M.B.A., University of Hartford (1993)

Linda J. Lowe-Krentz, *Assistant Professor of Biochemistry* (1993)
B.A., Ph.D., Northwestern University (1993)

Link Martin, Jr., *Assistant Professor of Social Work and Director of Field Instruction* (1988)
B.S., Murray State University; M.S.W., University of Hawaii (1988)

Louis F. Martin, *Assistant Professor of English* (1988)

B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)

Margaret McFarland, *Assistant Professor of Social Work, part-time* (1990)

B.S.W., Lock Haven University; M.S.W., Maryland School of Social Work; Ph.D., University of Maryland at Baltimore (1990)

Dana Gulling Mead, *Assistant Professor of English* (1989)

B.A., M.A., University of Tennessee, Knoxville; Ph.D., Texas Christian University (1989)

Donald G. Muston, *Assistant Professor of Business* (1977)

B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Jane E. Palmquist, *Assistant Professor of Music* (1990)

B.M.E., Northern State College; M.M., Ph.D., University of Texas at Austin (1990)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)

B.A., Gettysburg College; M.S., Ph.D., Vanderbilt University (1988)

Michael J. Rohrbacher, *Assistant Professor of Music Therapy* (1989)

B.M., East Carolina University; M.S., Johns Hopkins University (1989)

Gabriela R. Sanchis, *Assistant Professor of Mathematics* (1991)

B.S., Syracuse University; M.A., Ph.D., University of Rochester (1991)

Michael Severeid, *Assistant Professor of Theatre* (1990)

A.B., Middlebury College; M.A., Central Missouri State University (1990)

Bobette H. Thorsen, *Assistant Professor of Mathematics* (1993)

B.A., Brown University; M.S., Montana State University; Ph.D., University of California, Santa Cruz (1993)

Juan A. Toro, *Assistant Professor of Education* (1992)

B.S., Catholic University of Puerto Rico; M.S., Western Illinois University; Ph.D., Pennsylvania State University (1992)

Robert P. Wheelersburg, *Assistant Professor of Anthropology, Assistant Dean of the Faculty* (1989)

B.A., Ohio State; A.M., Ph.D., Brown University (1989)

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)

B.A., Bridgewater College (1968)

Instructors

Catherine Clark, *Instructor in Occupational Therapy* (1993)

B.S., M.S., Thomas Jefferson University; OTR/L (1993)

Leota E. Dye, *Instructor in Communications* (1992)

A.A., Hutchinson Community College; B.S., M.A., Kansas State University (1992)

Lois K. Herr, *Visiting Instructor in Marketing* (1993)

B.A., Elizabethtown College; M.B.A., Fordham University (1993)

James W. Hunter, Jr., *Instructor in Theatre and Technical Director of Theatre* (1991)

B.A., University of North Carolina-Asheville; M.F.A., University of Virginia (1991)

Conrad L. Kanagy, *Visiting Instructor in Sociology* (1993)

B.A., Wheaton College; M.S., The Pennsylvania State University (1993)

Lou Ellen Schellenberg, *Instructor in Art* (1992)

B.A., Framington State College; Diploma, School of Museum of Fine Arts, Boston; M.F.A., State University of New York at Albany (1992)

Martin F. Thomson, *Instructor in Communications* (1993)

B.S., University of Delaware; M.S., West Chester University (1993)

Lecturers

Richard L. Evans, *Lecturer in Computer Science and Coordinator for Academic Computing* (1990)

B.S., University of Louisville; M.S., Naval Post-graduate School (1990)

David Ferruzza, *Lecturer in Physics and Director of Engineering Programs* (1993)

B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology (1990)

Candace H. O'Donnell, *Part-time Lecturer in English and Education and Supervisor of Secondary Education*

B.A., Washington University; M.A., Millersville State College

Debra D. Ronning, *Lecturer in Music and Director of the Preparatory Division*

B.S., M.A., Indiana University of Pennsylvania

Adjunct Faculty On-Campus

Sherry Albert, *Department of Occupational Therapy*

Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Cecil A. Archbold, *Department of Business* M.S., Roosevelt University

David D. Bailey, *Department of Business* M.Ad., Pennsylvania State University, Capitol Campus

Virginia B. Bates, *Department of Modern Languages*

B.A., Southern Illinois University; M.A., University of California at Los Angeles

Ann S. Dinsmore, *Department of Fine and Performing Arts*

B.S., Elizabethtown College

C. William Eckenrode, *Department of Business*

M.A., St. Francis College

Russell Eisenbise, *EXCEL Program* M.A., Temple University

William J. Fulton, *Department of Business* J.D., University of Pittsburgh

Laszlo Geder, *Department of Occupational Therapy*

M.D., Ph.D., University of Debrecen, Hungary

Richard H. Gifford, Jr., *Department of Business*

M.B.A., Gettysburg College

Jane R. Gockley, *Department of Physical Education*

M.S., Millersville University

Rebecca Griffin-Harvey, *Department of Business*

M.A., Pennsylvania State University

Donald Gross, *Department of Business* M.B.A., Boston University

Luke K. Grubb, *Department of Fine and Performing Arts*

B.S., Lebanon Valley College; M.M., Indiana University

John A. Guerrisi, *Department of Business* M.Ad., Pennsylvania State University, Capitol Campus

Doris J. Hall-Gulati, *Department of Fine and Performing Arts*

B.M., Peabody Conservatory of The Johns Hopkins University; M.M., University of Michigan

Robert B. Harnish, *Department of Religious Studies*

M.Div., Lutheran Theological Seminary at Gettysburg

Peggy S. Herr, *Department of Modern Languages*

B.A., University of the Pacific; M.A., Brigham Young University

Cynthia Hess, *Department of English* B.S., Millersville State College; M.A., Millersville University

Dorothy A. Humpf, *Department of Sociology and Anthropology*
Ph.D., Pennsylvania State University

Carole L. Isaak, *Department of English*
B.A., Washington University; M.A., University of Northern Colorado

Richard A. Joyce, *Department of History*
M.A., San Francisco State University

Paul A. Kadjo, *Department of Business*
Ph.D., State University of New York

Linda Kirkpatrick, *Department of Fine and Performing Arts*
M.M., North Texas State University

Joseph Kujovsky, *Department of Business*
M.B.A., Auburn University

David E. Leithmann, *Department of Fine and Performing Arts*
B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University

Mark A. McConaughy, *Department of Sociology and Anthropology*
Ph.D., University of Pittsburgh

Alison J. Mekeel, *Department of Fine and Performing Arts*
B.M., Oberlin Conservatory; M.M., New England Conservatory of Music

James A. Miller, *Department of Business*
J.D., University of Baltimore

Anna Surls Moore, *Department of Social Work*
B.A. Roosevelt University; M.S.W. University of Illinois

Grant Moore, *Department of Fine and Performing Arts*
B.A., Indiana University of Pennsylvania

Warren Munick, *Department of Business*
M.B.A., Miami University of Ohio

Paul M. Munyofu, *Department of Mathematical Sciences*
Ed.D., University of Pittsburgh

Steven J. Musser, *Department of Business*
Ph.D., Temple University

Bruce G. Nilson, *Department of Business*
M.S., Pennsylvania State University

Gretchen N. Patti, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

M. Benson Paull, *Department of Philosophy*
M.Th., Princeton Theological Seminary

Sue A. Redmond, *Department of Business*
B.S., Shippensburg State College

Janet Rowand, *Department of Occupational Therapy*
B.S., Elizabethtown College; OTR

Michael A. Scanlin, *Department of Physics*
B.A., Franklin and Marshall College; M.S., Pennsylvania State University

Carl E. Schroeder, *Department of Fine and Performing Arts*
B.M., M.M., Peabody Conservatory of Music

Laurie A. Showers, *Department of Mathematical Science*
B.S., Elizabethtown College

Arthur E. Simpson, Jr., *Department of Business*
M.B.A., Pennsylvania State University, Capitol Campus

William M. Sloane, *Department of Communications*
B.A., York College of Pennsylvania; J.D., Delaware Law School of Widener University; L.L.M., Temple University; S.J.D., Thomas Jefferson College of Law of Heed University

Janice Stouffer, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Richard J. Tushup, *Department of Psychology*
Ph.D., University of Delaware

JoAnne Weaver, *Department of Business*
B.S., Mt. Saint Mary's College; C.P.A.

Carol S. Weavill, *Department of Computer Science*
B.S., Elizabethtown College

Judy Williams-Henry, *Department of Fine and Performing Arts*
B.F.A., Boston Conservatory of Music; M.S., Wheelock College

John Zurfluh, *Department of Fine and Performing Arts*
B.M., Eastman School of Music; M.M., D.M.A., Catholic University of America

Off-Campus Medical Technology

Margaret Black, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S., Lebanon Valley College; M.T. (ASCP)

Sharon Deitrich, *Reading Hospital and Medical Center*, West Reading, Pa.
B.S., Kutztown University

John W. Eiman, *Abington Memorial Hospital*, Abington, Pa.
M.D., University of Pennsylvania School of Medicine

Edward Eisenhower, *St. Joseph Hospital*, Lancaster, Pa.
M.D., Medical University of South Carolina

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M.S., Temple University; M.T. (ASCP)

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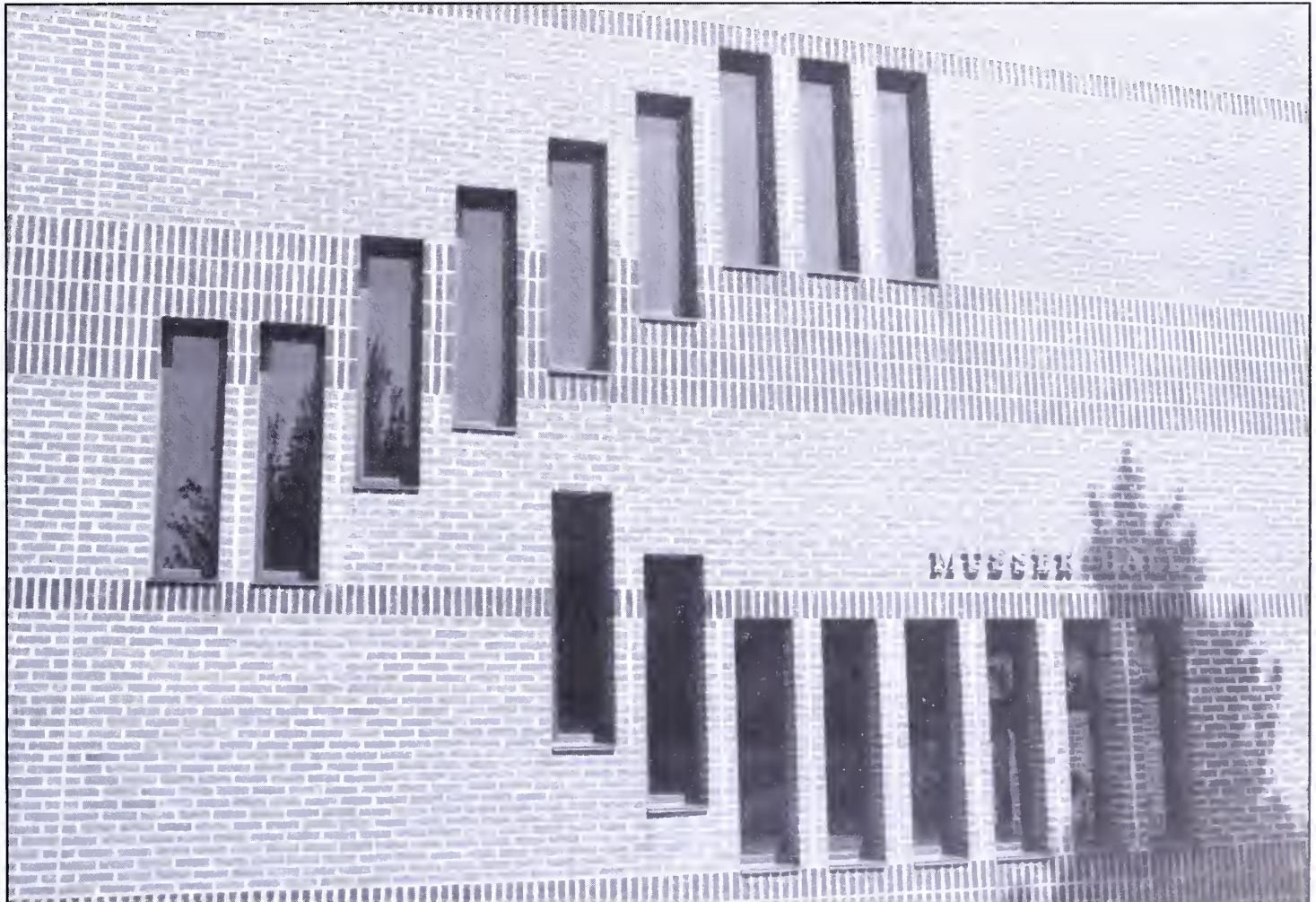
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Index

A

Academic Advising 9
 Academic Dishonesty 17
 Academic Dismissal 14
 Academic Due Process 16
 Academic Good Standing 14
 Academic Honors 14
 Academic Judicial System 16
 Academic Majors 3
 Academic Minors 3
 Academic Probation 14
 Academic Program 3
 Core Program 3
 Degrees offered 3
 Majors offered 3
 Minors offered 3
 Academic Standing 14
 Accounting 24. *See also* Business, Dept. of
 Adding Courses 11
 Administration 82
 Advanced placement 8
 Advising 9
 Allied Health Programs 69
 Anabaptist and Pietist Studies Minor 71
 Anthropology 19. *See also* Sociology and
 Anthropology, Dept. of
 Areas of Understanding 4
 Auditing Courses 10

B

Biology, Dept. of 19
 Biology Health Professions 7
 Board of Trustees 84
 Brethren Colleges Abroad program 7
 Business, Dept. of 22

C

Calculation of Grades 13
 Challenge Testing 8
 Change of Major 9
 Change of minor 9
 Change of Personal Information 9
 Change of Registration 11
 Checksheets 9
 Chemistry, Dept. of 27
 Class Attendance 12
 Class Standing 14
 CLEP Examinations 8
 Code of Integrity 16
 College Scholars 14
 Common Core 4
 Communications, Dept. of 30
 Computer Science, Dept. of 33
 Continuing Education 18
 Convocation 18
 Core Program 3
 Areas of understanding 4
 Common core 4
 Course Load 10
 Credit by Examination 8
 Credit Requirements 15
 Credits 13

D

Dance. *See* Fine and Performing Arts, Dept. of
 Dean's List 14
 Declaration of major 9
 Declaration of minor 9
 Degrees Offered 3

Departmental Honors 15
 Directed Study 7
 Directory 75
 Administrative Staff 83
 Board of Trustees 84
 Faculty 75
 The Administration 82
 Dropping Courses 11

E

Early Warning System 13
 Earth Science. *See* Physics, Dept. of
 Economics 26. *See also* Business, Dept. of
 Education, Dept. of 35
 Educational Philosophy and Objectives 2
 Engineering. *See* Physics, Dept. of
 English, Dept. of 37

F

Fine and Performing Arts, Dept. of 40
 Forestry and Environmental Management 69
 French. *See* Modern Languages, Dept. of
 Full-time status 10

G

General Science Certification 70
 German. *See* Modern Languages, Dept. of
 Grade Appeals 17
 Grade Point Average 15
 Grades 13
 Graduation 15
 Ceremony 15
 Credit requirements 15
 Grade point average 15
 On-campus credits 15

H

History, Dept. of 46
 Honors 14
 Human Services Minor 74

I

Incomplete Grades 13
 Independent Study 6
 Individual Program Adjustments 14
 Interdisciplinary Programs 68
 Anabaptist and Pietist Studies minor 71
 Biology/Allied Health 69
 Forestry and Environmental Management 69
 General Science Certification 70
 International Studies minor 72
 Peace and Conflict Studies minor 72
 Pre-law 73
 Pre-medical 68
 Public Administration minor 73
 Social Studies Certification 71
 International Studies Minor 72
 Internships 8

J

Joint Institution Programs 7
 Biology health professions 7
 Pre-engineering 7
 Pre-forestry 7

L

Leave of Absence 12
 Lecture Series 18
 Lecturers 78

M

Mathematical Sciences, Dept. of 47
 Mission Statement 2

Modern Languages, Dept. of 50
 Music. *See* Fine and Performing Arts, Dept. of

O

Occupational Therapy, Dept. of 51
 Off-Campus Study 7
 On-Campus Credits 15
 Overload Credits 10

P

Part-time status 10
 Pass/No Pass Grading 13
 Peace and Conflict Studies Minor 72
 Philosophy, Dept. of 54
 Physical Education and Health, Dept. of 55
 Physics, Dept. of 56
 Placement Testing 9
 Political Science, Dept. of 59
 Pre-allied Health 7
 Pre-engineering 7
 Pre-forestry 7
 Pre-Law Program 73
 Pre-medical Programs 68
 Preregistration 11
 Program Variations and Options 6
 Psychology, Dept. of 60
 Public Administration Minor 73

Q

Quality Points 13

R

Rank in Class 14
 Readmission 12
 Registration 11
 Pre-registration 11
 Religious Studies, Dept. of 62
 Repeating Courses 10

S

Schedule Changes 11
 Secondary Education. *See* Depts. of Biology,
 Chemistry, English, Mathematics
 Social Studies Certification 71
 Social Work, Dept. of 64
 Sociology and Anthropology, Dept. of 65
 Spanish. *See* Modern Languages, Dept. of
 Special Privileges 15
 Special Programs 18
 Student Responsibilities 9
 Study Abroad 7

T

Theatre. *See* Fine and Performing Arts, Dept.
 of
 Transcripts 11
 Transfer of Credits 10
 Trustees 84
 Tutorials 7

V

Variations to Program 6
 Visual Arts. *See* Fine and Performing Arts,
 Dept. of

W

Withdrawal 12
 From class 12
 From College 12
 Medical 12

Elizabethtown COLLEGE



1994-95 Academic Program



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Calendar 1994-95

Fall Semester

August	22-26	Faculty Meetings and RA and PC Training
	27	Freshmen Arrive
	29	Registration Day; Evening Classes Begin, 6:30 p.m.
	30	Day Classes Begin, 8:00 a.m.
September	5	Labor Day—No Classes
	6	Monday Schedule of Day Classes; Tuesday Evening Classes Meet
October	7	Fall Break—No Classes
	15	Homecoming
	19	Mid-term
November	23	Friday Schedule of Day Classes; Classes End at 5:00 p.m.
	24-27	Thanksgiving Recess
	28	Classes Resume 8:00 a.m.
December	9	Classes End, 5:00 p.m.
	12-17	Final Examinations

Spring Semester

January	11-15	Faculty Meetings and Workshops
	16	Registration Day
	17	Classes Begin, 8:00 a.m.
March	3	Mid-term
	4-12	Spring Break—No Classes
	13	Classes Resume, 8:00 a.m.
April	13	Easter Recess Begins at 5:00 p.m.
	14-17	Easter Recess
	17	Evening Classes Resume, 6:30 p.m.
	18	Day Classes Resume, 8:00 a.m.; Monday Schedule of Day Classes, Tuesday Evening Classes Meet
May	5	Classes End, 5:00 p.m.
	8-13	Final Examinations
	20	92nd Commencement

Summer Session

May 30- July 19

DATE DUE

Elizabethtown College is accredited by the Middle States Association of Colleges and Secondary Schools.

The policies and provisions contained in this catalog are subject to the right of the trustees, administration, and faculty to repeal, change, or amend them at any time.

The provisions of this booklet are not to be regarded as an irrevocable contract between Elizabethtown College and the student or between the College and the parents or guardians of the students.

Elizabethtown College complies with the requirements of Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, and all other applicable, federal, state, and local statutes, ordinances, and regulations. Elizabethtown College does not illegally discriminate against students, prospective students, employees, or prospective employees on the basis of race, color, religion, ethnic or national origin, personal handicap, age, or sex.

Elizabethtown College was founded in 1899 by leaders of the Church of the Brethren. Today, the College is governed by an independent Board of Trustees and affirms a continuing covenantal relationship to the Church of the Brethren.

The Academic Program

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1994-95



Contents

Educational Philosophy and Objectives	2
The Academic Program	3
Course Descriptions	20
Biology	20
Business	23
Chemistry	28
Communications	31
Computer Science	34
Education	36
English	38
Fine And Performing Arts	41
(Art, Dance, Music, Theater)	
History	46
Mathematical Sciences	48

Modern Languages	50
(French, German, Spanish)	
Occupational Therapy	52
Philosophy	55
Physical Education And Health	56
Physics, Earth Science, Engineering	57
Political Science	59
Psychology	61
Religious Studies	63
Social Work	65
Sociology And Anthropology	66
Interdisciplinary Programs	69
Directory	77
Index	88

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1994-1995

Elizabethtown College

Elizabethtown, Pennsylvania 17022-2298

Elizabethtown College:

Educational Philosophy and Objectives

The purpose of the founders of the College was to achieve "such harmonious development of the physical, mental, and moral powers of both sexes as will best fit them for the duties of life and promote their spiritual interests." The motto of the College for years expresses this goal: "Educate for Service."

The original charter statement of purpose identified the important outcomes of education as being the development of critical and constructive habits of thought; the capacity for clear and coherent self-expression; the understanding of the natural, social and cultural world; the acquiring of a sense of personal, ethical, and spiritual values and of responsibility to the society; and the acquisition of skills and knowledge in a specialization to make the student an effective and productive member of society. In developing a statement of philosophy and objectives that both reflect our present understandings, the following represents a reasonably broad institutional consensus of the appropriate educational philosophy and goals for the years ahead to which the full College community can and should relate:

Founded by members of the Church of the Brethren in 1899, Elizabethtown College aims to develop sound intellectual judgment, keen moral sensitivity and an appreciation for beauty in the world. This educational process fosters the capacity for independent thought and commitment to personal integrity. In keeping with its historical and religious tradition, the College affirms the values of peace, justice, and human dignity, striving to achieve a distinctive blend of the liberal arts and professional studies. This union of the world of spirit and the world of work is expressed in the College motto, "Educate for Service," and on its seal, *Deus Lux et Veritas*.

The College fulfills this mission by:

- Striving to attain a diverse academic community.
- Promoting cultural pluralism and international understanding in a collegial community.
- Creating an environment that encourages the spirit of free inquiry, stimulates intellectual curiosity, and cultivates academic achievement.
- Developing the skills for critical analysis and effective communication.
- Designing programs that foster maturity, leadership, and responsible citizenship.
- Providing campus-wide support services necessary for the development of mind, body, spirit.

- Serving as a learning, resource, and cultural center for society at large.

The institutional goals for the academic program at Elizabethtown College, in outline, reflect this general statement of educational philosophy:

1. A threefold purpose in the education of students:
 - a. A general education (core) requirement, developing analytical and relational process of thought, clear and coherent means of self-expression, and a growing understanding of self and environment through distributional and integrative requirements in the liberal arts.
 - b. A specific education requirement or major, preparing the student for advanced studies and/or career opportunities by adding the different experience of specialized in-depth knowledge to the breadth of the general educational requirements.
 - c. A body of electives ensuring flexibility in each student's program that will best suit individual needs and interests, whether in general or major areas of study.
2. Response to contemporary needs for greater international understanding, by providing general education in intercultural studies and languages.
3. Provision of support in both general education and major programs for cross-disciplinary and interdisciplinary education.
4. For major disciplines of study, inclusion of opportunities in most of the liberal arts traditions of sciences, fine arts, humanities, and social sciences, and in the professional areas; while maintaining balance between professional and liberal arts programs of study for majors.
5. Provision for adult educational opportunities in a variety of traditional and non-traditional modes, integrated as far as possible with the regular educational program and faculty.
6. Fostering an environment supportive of faculty research and professional development.
7. Supporting as a part of its regular educational program quality experiential-learning programs such as clinical experiences, supervised internships, field study and other off-campus courses, and similar activities.
8. Continuing to support or to develop as appropriate, strong cooperative programs with other institutions of higher learning.

The Academic Program

Degrees Offered

Elizabethtown College grants two residence degrees: the Bachelor of Arts and the Bachelor of Science.

Both bachelor degrees require the completion of 125 credits, including the completion of all requirements of the major and the Core Program; a grade point average of at least 2.00 in the major; and a grade point average of at least 2.00 overall.

The College offers three additional degrees through the Center for Continuing Education: the Bachelor of Liberal Studies, the Bachelor of Professional Studies, and the Associate of Science.

The Academic Major

The College offers degrees in the following academic majors, within which a number of options are available. The details of major requirements are included in the departmental listings.

Accounting (Business), B.S.
Biochemistry (Chemistry), B.S.
Biology, B. S.
Business Administration, B.S.
Chemical Physics (Physics), B.S.
Chemistry, B.S.
Communications, B.A.
Computer Science, B.S.
Computer Engineering (Physics), B.S.
Early Childhood Education, B.S.
Economics (Business), B.A.
Elementary Education, B.S.
Engineering (Physics), B.A.
Engineering Physics (Physics), B.S.
English, B.A.
Environmental Science (Biology), B.S.
Forestry and Environmental Management (Interdisciplinary), B.S.
General Science (Interdisciplinary), B.S.
History, B.A.
Industrial Engineering (Physics), B.S.
International Business, B.S.
Mathematics, B.S.
Medical Technology (Chemistry), B.S.
Modern Languages (French, German or Spanish), B.A.
Music, B.A.
Music Education, B.S.
Music Therapy, B.S.

Occupational Therapy, B.S.
Philosophy, B.A.
Physics, B.S.
Political Science, B.A.
Psychology, B.A.
Religious Studies, B.A.
Social Studies (Interdisciplinary), B.S.
Social Work, B.A.
Sociology-Anthropology, B.A.

The Academic Minor

Students may elect to pursue an academic minor in addition to their major. Such a program enables the student to acquire depth of knowledge in an area of secondary interest outside the major.

The College offers the following minors. For details, consult the departmental listings.

Anabaptist and Pietist Studies (Interdisciplinary)
Anthropology (Sociology)
Biochemistry (Chemistry)
Biology
Business Administration
Chemistry
Communications
Computer Science
Economics (Business)
English
General Science (Interdisciplinary)
History
Human Services
International Studies (Interdisciplinary)
Mathematics
Modern Language (French, German or Spanish)
Music
Peace Studies (Interdisciplinary)
Philosophy
Physics
Political Science
Psychology
Public Administration (Interdisciplinary)
Religious Studies
Sociology
Theater
Visual Arts

The Core Program

Through the Core Program, the College affords each student a broad exposure to the liberal arts and the sciences. The purpose is to make it possible for the student to experience a core curriculum of traditional and innovative liberal arts areas that complement both the more intensive studies in the academic major and minor and the less structured framework of elective courses. Core requirements are of two kinds: the Common Core, which consists of the Freshman Seminar and the Junior/

Senior Colloquium; and Areas of Understanding in which students may choose from approved Core courses in prescribed academic areas.

Alternatives to the Core Program, or deviations from it, must be approved in advance by the Academic Standing Committee and the dean of the faculty.

Common Core

Freshman Seminar 3 credits

Entering freshmen take a Freshman Seminar during their first semester.

FS100 Freshman Seminar*

3 credits. The Freshman Seminar provides an educational experience which is composed of several important components. First, it aims to develop intellectual skills such as critical analysis and synthesis, and communication skills such as speaking and writing. Second, it introduces students to the intellectual life of the College and lays the foundation for self-directed, independent thinking. For these reasons, the Freshman Seminar is planned to assist the student in the transition from high school to college.

Junior/Senior Colloquium 3 credits

All courses in all Areas of Understanding must be completed before students begin the colloquium. The theme of the Junior-Senior Colloquium for the academic year 1994-95 is "Individuality and Community."

JSC300 Junior/Senior Colloquium*

3 credits. In the Junior/Senior Colloquium, students return to the seminar setting and explore a selected contemporary issue of national or world significance from perspectives other than those of the major. They are engaged in serious discourse with students and faculty from other disciplines, examining broader intellectual, social, and ethical concerns associated with liberal learning. This experience culminates in the writing of a major paper which integrates prior learning and the diverse studies of the undergraduate experience.

Areas of Understanding

Power of Language 3 credits

Based upon writing skill level, new students are required to take in their first year either English 011 (a college composition preparatory course that does not count for Core or graduation credit), English 100*, Writing and Language (a college composition course), or an advanced 100-level Power of Language course, En 150*, Com 105*, or Ph 110*.

Students placed in English 011 must eventually take English 100* for Power of Language Core credit. Students placed in English 100* must successfully complete English 100 for their Power of Language core. Students who receive AP or transfer credit for English 100* or who enroll in English 100*, cannot receive credit for English 150*, Advanced Writing and Language.

Language is the most important means of communicating in all human societies; it is the ability that, above all others, distinguishes us from other forms of life. In a democratic society, it is the essential means through which policies are formulated, argued for, and accepted or

rejected. The hallmark of a liberally educated person is the ability to articulate ideas.

This requirement is intended to introduce students to potentialities of the English language supported by a knowledge of its history. It should provide the opportunity for extensive writing experience in the use of logic and rhetoric.

Courses satisfying this requirement are:

- Com 105* Fundamentals of Speech
- En 100* Writing and Language
- En 150* Advanced Writing and Language
- Ph 110* Logic and Critical Thinking

Mathematical Analysis 3-4 credits

Based upon mathematical analytical skill level, new students are required to take in their first year either Math 011 (a college mathematics preparatory course that does not count for Core or graduation credit), or a 100-level mathematical analysis course. Students placed in Math 011 must successfully complete this course before enrolling in mathematical analysis courses.

This requirement stresses competency in quantitative reasoning and mastery of problem solving skills. Courses satisfying this requirement help students to understand quantitative data, for example, to recognize their use in making future predictions, to acknowledge that they can be employed in support of argumentation, and to realize that they can be manipulated to mislead.

Courses satisfying this requirement are:

- CS 121* Computer Science I
- Ma 105* Mathematics for Liberal Studies
- Ma 121* Calculus I
- Ma 151* Probability and Statistics
- Ph 180* Symbolic Logic

Creative Expression 3 credits

This requirement stresses appreciation of the diversity of human perception and its expression. Courses satisfying this requirement concentrate on the history, theory, creation, performance, and criticism of art forms from music, painting, drama, cinema, architecture, sculpture, and the graphics arts. They should acquaint students with basic concepts and language employed in the study and analysis of these works, preparing them to react to art forms and make aesthetic judgments.

Courses satisfying this requirement are:

- Art 105* Drawing I
- Art 220* Sculpture
- En 110* Literature: Expressive Form
- En 116* Film as Literature
- En 135* Shakespeare Through Performance
- En 212* Forms of the Quest
- En 251* The Literature of Laughter
- En 281* Writing and Analyzing the Short Story
- Mu 106* Interpretation of Music
- Mu 115* Music Fundamentals at the Keyboard
- Th 155* Introduction to Theater Technology
- Th 165* Basic Acting

Cultural Heritage**6 credits**

This requirement introduces students to significant historical knowledge which helps them understand themselves and the society in which they live. Through critical analysis of literature, science, art forms, values, social institutions, and governments associated with Western thought, students are provided with the historical consciousness necessary to intelligently respond to major issues of the modern world.

Courses that satisfy this requirement are:

- Art 155* Introduction to Art
- Art 203* Twentieth Century Art
- Com 245* Communication Analysis and Culture
- En 105* Introduction to Literature
- En 112* Introduction to Poetry
- En 221* The Literature of Medieval England
- En 222* Literature of the Renaissance
- En 223* English Neo-Classicism
- En 224* English Romanticism
- En 225* Victorian British Literature
- En 226* Twentieth Century British Literature
- En 241* American Literature I
- En 242* American Literature II
- En 246* Minority Voices in American Literature
- Hi 115* Modern European History
- Hi 215* English History
- Hi 216* Modern Britain
- Hi 218* Europe in the Twentieth Century
- Mu 105* Introduction to Music Literature
- Mu 242* Mozart and Eighteenth Century Classicism
- Ph 105* Introduction to Philosophy
- Ph 201* Ancient and Medieval Philosophy
- Rel 101* Religious Literature of Ancient Israel
- Rel 102* Religious Literature of Early Christianity
- Th 105* Introduction to Theater

Foreign Cultures**and International Studies****3-4 credits**

This requirement is satisfied by courses with a contemporary international, cultural, or social frame of reference. In these courses students study the human experience from a cultural point of view different from that of the U.S. and develop understanding of the interdependence among countries.

Courses that satisfy this requirement are:

- An 111* Understanding Human Cultures
- BA 251* Cross Cultural Understanding
- ESL 112* Advanced English as a Second Language and American Culture
- Fr 112* Fundamentals of Language and Culture II
- Fr 211* Communication Through Language and Culture I
- Fr 212* Communication Through Language and Culture II
- Ger 112* Fundamentals of Language and Culture II

- Ger 211* Communication Through Language and Culture I
- Ger 212* Communication Through Language and Culture II
- Hi 220* History of Soviet Union
- Hi 227* History of Africa
- Mu 205* Music of Non-Western Cultures
- PS 245* International Relations
- Rel 221* Western Religions
- Rel 222* Eastern Religions
- Sp 112* Fundamentals of Language and Culture II
- Sp 211* Communication Through Language and Culture I
- Sp 212* Communication Through Language and Culture II

Natural World**7-8 credits**

This requirement is satisfied by systematic study of the natural world and must include a minimum of one laboratory course. These courses stress study of subject matter and methods of the discipline but also emphasize ethical and social issues that arise when science influences technological development.

Courses that satisfy this requirement are:

- An 201* Physical Anthropology
- Bio 105* Principles of Biology
- Bio 106* Genetics, Evolution, and Man
- Bio 108* Living With the Environment
- Bio 111* Introduction to Biological Sciences
- Bio 206* Biotechnology
- Ch 101* General Chemistry: Practical Principles
- Ch 105* General Chemistry: Theoretical Principles
- Ch 107* The Chemistry of Life: Energy
- Ch 113* Organic Chemistry I
- Ch 207* The Chemistry of Life: Biochemistry of Cancer and Aids
- ES 111* The Dynamic Earth
- ES 112* The Geology of Landscape
- ES 215* Meteorology
- Phy 101* Physics I
- Phy 113* Spacetime Physics
- Phy 114* Cosmology
- Phy 212* Astronomy
- Phy 216* Quantum Theory and Reality
- Psy 208* Health Psychology

Social World**6 credits**

This requirement is satisfied by courses which emphasize the ways in which behavior is shaped, ranging from the formation of the self to the interaction of nations.

Courses that satisfy this requirement are:

- Com 115* Media and Society
- Ec 203* The Greatest Economic Mystery Series
- Hi 201* History of the United States to 1877
- Hi 202* History of the United States Since 1877
- Hi 210* Europe Since 1789

PS 111*	American National Government
PS 252*	Latin American Society
Psy 105*	General Psychology
Psy 237*	Psychology of Women
Rel 266*	Psychology of Religion
So 101*	Discovering Society
So 204*	Population and Global Issues
SW 151*	Social Welfare Issues in Contemporary Society
SW 180*	Interpersonal Helping Skills
SW 233*	Human Behavior in the Social Environment
SW239*	Human Sexuality

Values and Choice

3 credits

This requirement is satisfied by courses that examine values and morality as they relate to matters of choice and responsible citizenship.

Courses that satisfy this requirement are:

En 113*	Introduction to Drama
En 114*	Introduction to Fiction
En 121*	Money and Status in American Literature
En 245*	Growing Up in America
Hi 208*	Technology and Values in the American Experience
Hi 212*	Race and Ethnicity in American History
Hi 221*	History of Non-Violence
Ph 115*	Ethics
PS 105*	Western Political Heritage
PS 205*	Values and Vision
Rel 105*	Forms of Religious Experience
Rel 165*	Introduction to Peace and Conflict Resolution
Rel 213*	Religion and Gender
Rel 215*	Social Ethics
So 265*	Hutterites, Mennonites, and Brethren in Modern Society

Physical Well Being

3 credits

This requirement is satisfied by completing three courses in Physical Well Being, at least two courses of which must be devoted to physical activity. No more than five Physical Well Being credits may be counted for graduation credit. This requirement prepares students for a lifetime commitment to physical activity and well being with an emphasis on individual fulfillment.

Courses that satisfy this requirement are:

Da 101*	Interpretive Movement
Da 102*	Introduction to Ballet
PE 105*	Swimming
PE 110L*	Physical Education for the Elementary School Child Laboratory
PE 115*	Physical Fitness and Wellness
PE 119*	SCUBA
PE 120*	Aerobics
PE 125*	Tennis

PE 130*	Bicycling
PE 140*	Bowling
PE 145*	Field Hockey/Volleyball
PE 146*	Racquetball
PE 150*	Volleyball
PE 161*	Adaptive Physical Education
PE 165*	Golf/Badminton
PE 175*	Archery/Badminton
PE 181*	Self-Directed Physical Education Activity
PE 185*	Basketball
PE 190*	Horsemanship
PE 194*	Skiing
PE 195*	Soccer
PE 218*	Water Safety Instruction
Psy 108*	Addictions

Additional Requirements:

- Students must take at least four 200-level Core courses to complete the Core Program. Prerequisites for 200-level Core Program courses include completion of the Freshman Seminar; Mathematical Analysis; Power of Language; and either three other 100-level Core Program courses or sophomore standing.
- In Areas of Understanding requiring two or more courses, students must take the courses in different disciplines.
- Physical Well Being courses are excluded from the above restriction and do not satisfy the 100-level prerequisite requirements to take 200-level Core Program courses.
- Students may count only one course in their major department to meet Core Program requirements. The major department course must be an elective in the department and may not fulfill a major requirement.
- Students are required to complete the appropriate level of mathematics, English, and/or modern language courses as determined by the College.
- Seniors may not enroll in 100-level Core Program courses except with the permission of the provost/dean of the faculty.

Program Variations and Options

In addition to majors and minors, Elizabethtown College offers a number of alternative learning opportunities both on and off campus.

On-campus study includes special programs which emphasize individual study and close work with a member of the faculty.

Off-campus opportunities include joint programs with academic institutions or clinical facilities, or study abroad.

On-Campus Study

Elizabethtown College recognizes the advantages and the need of education and study outside the traditional classroom, and offers the following opportunities:

Independent Study is a way for students to pursue individual investigation or reading in an area of special interest, or to advance competencies in the major/minor area. (It is not used simply to assemble credits for graduation or to replace a course listed in the curriculum.

Independent Study is available to students with junior or senior status and with a minimum grade point average of 2.0. Students pursuing an Independent Study can expect to do extensive research, reading, writing, or creative work resulting in a major paper, presentation, work of art, or other project agreed upon by the supervising faculty member and the student.

The work is initiated by the student and progresses largely unsupervised. Independent Studies are usually registered for 1-3 credits per study. Normally, a student may carry only one Independent Study at a time, or two Independent Studies at the discretion of the Independent Study Committee. Independent Study may not be used toward Core Program requirements.

Independent Study is not tied to the academic calendar (a project may be started or finished at any point). However, the project must be submitted to the Independent Study Committee prior to the preregistration period for the semester during which it will be begun. Following approval of the Independent Study Committee, the student must officially register the project with the Office of Registration and Records during the registration period for the semester during which it will be completed. Forms are available in the Office of Registration and Records. Any requests for exceptions to the policy must be made to the Academic Standing Committee.

Directed Study is a second type of study available to students at Elizabethtown College. In contrast to independent study of a special topic, Directed Study is undertaken for a regular course in the curriculum which is not being offered in a given semester. This method of study should be used by the student who needs rather frequent conferences with the professor.

An additional surcharge is assessed the full-time student who registers for Directed Study. Part-time students who are granted permission to register for a Directed Study course pay the same surcharge. Full-time students whose course load exceeds 17 hours as a result of the Directed Study registration are charged the current part-time rate for tuition for those hours in excess of 17, plus the surcharge for all Directed Study credits.

Tutorials are available where remedial work is necessary for the student to profit from a course in the curriculum. A tutorial involves more frequent meetings between professor and student than either Independent Study or Directed Study. It is the responsibility of the student to locate a professor who is willing to enter into the tutorial agreement. Generally a faculty member will not teach more than one tutorial per semester.

Any student who enters into a tutorial agreement is

responsible for the regular tuition and a surcharge.

Note: Students must register for Directed Studies and Tutorials *prior* to beginning course work. Registration forms are available in the Office of Registration and Records.

Off-Campus Study

Study Abroad

The six colleges associated with the Church of the Brethren cooperate in the **Brethren Colleges Abroad** (BCA) program, offering two types of international experiences.

The first involves study in an environment which features a foreign language. For example, students may study at Phillips-University, at Marburg/Lahn, Germany; at the University of Strasbourg, Strasbourg, France; at the University of Nancy, Nancy, France; at the University of Barcelona, Barcelona, Spain; at the Universidad Vera Cruz, Xalapa, Mexico; and at the University of Azuay, Cuenca, Ecuador.

The second type of experience occurs in a setting where knowledge of a second language is not a requirement. Programs of this nature exist at the Dalian Institute of Foreign Languages, Dalian, China; the Cheltenham and Gloucester College of Higher Education, Cheltenham, England; the LaVerne College of Athens, Athens, Greece; and the Hokusei Gakuen University, Sapporo, Japan.

Students in the foreign language setting receive intensive language instruction prior to the opening of the university. A wide selection of courses in the social sciences and humanities is available in the BCA programs.

To qualify for the BCA program, the student should have a 3.0 grade point average. Students bound for Germany must have completed the equivalent of German 212 and have approximately a B average. Although most students bound for France or Spain must also have completed the equivalent of French 212 or Spanish 212, outstanding students who have completed French 211 or Spanish 211 will be accepted. Other qualifications include seriousness of purpose, good character, demonstrated potential for social adjustment, and a basic understanding of the United States and the host country.

The credits earned abroad are transferred toward the degree at Elizabethtown. Students' courses are approved by the director of records prior to departure. Interested students should contact Dr. Sharon R. Trachte, BCA program coordinator, for information and should confer with their major advisor.

Joint Institution Programs

In these programs, students study at the College and at affiliated academic institutions or clinical facilities. Five major programs are offered with other academic institutions: pre-forestry with Duke University; pre-engineering with Pennsylvania State University; biology health professions and pre-allied health with Thomas Jefferson University; and Washington Semester and World Capitals program with The American University.

In the **Pre-forestry** major, the student spends three years at the College and an additional year in professional

studies at Duke, after which the College grants the bachelor of science degree; a second year at Duke leads to a master's degree in forestry or environmental management. For further details, see the interdisciplinary section of this catalog.

Pre-engineering is a 3-2 program with The Pennsylvania State University. After completing three years at Elizabethtown College, the student transfers to University Park, completes two years of study in an engineering major, and receives a bachelor of arts degree from Elizabethtown College and a bachelor of science degree from The Pennsylvania State University. For further details, see the description in the Department of Physics listing.

The Biology Health Professions major is a 3-2 program with Thomas Jefferson University and other selected colleges and universities which grant degrees in the allied health sciences. The student spends three years at the College as a biology-allied health major. Upon the transfer of up to 29 credits from the upper level institution, a bachelor of science degree is awarded by Elizabethtown College. Completion of the remainder of the professional program results in the awarding of a bachelor of science degree from Thomas Jefferson University or another university.

In the **Pre-allied Health programs**, the student spends two years at the College and an additional two years at an affiliated institution. For further information, see the description in the Department of Biology listing.

Through an affiliation with The American University, the College offers the **Washington Semester** and **World Capitals Programs**. The Washington Semester Program offers a chance to study in Washington, D.C., and take advantage of the resources of the nation's capital. Students in the program work with the policymakers and business professionals who play a vital role in American government and culture. Full semester credit is earned by studying in one of nine areas: American Politics, International Politics, Peace and Conflict Resolution, Economic Policy, Justice, Journalism, Museum Studies and the Arts, International Business and Trade, or International Environment and Development. The World Capitals Program offers a semester of study abroad in London, Budapest, Brussels, Vienna, Santiago, Rome, Buenos Aires, Prague, Beijing, Madrid, Poznan, or Moscow. The programs require a minimum 2.5 grade point average, sophomore status, and two years of college-level language study.

The College also offers a number of majors in which work at affiliated clinical facilities constitutes an important part of the students' education. In music therapy, occupational therapy, social work, and medical technology, students combine work at the College with first-hand experience in hospitals, clinics, and social work and therapy programs. For detailed descriptions, see the listing under the Departments of Fine and Performing Arts, Chemistry, Occupational Therapy, and Social Work.

Internships

Some academic departments offer internships for credit as part of approved academic programs. Other types of internships may be initiated by the individual student or be offered by other educational institutions, agencies, businesses, or organizations. For such internships, the College publishes guidelines, copies of which are available from the director of records or department chair. Students are advised that the College will not grant academic credit or recognition for such internships without *prior* approval by the appropriate faculty member and administrative officer.

Credit by Examination

Three ways exist for regularly admitted students to receive academic credits and/or advanced placement by examination: (1) the College Entrance Examination Board's (CEEB) Advanced Placement Program (AP), (2) the College-Level Examination Program (CLEP), and (3) successful achievement on an Elizabethtown College faculty examination (Challenge Testing).

CEEB Advanced Placement Examinations

The College, with the approval of the department concerned, grants advanced placement and credit to students who perform satisfactorily on a CEEB Advanced Placement Examination.

CLEP Examinations

Credit is awarded for appropriate scores on the CLEP examinations according to the following guidelines.

1. *General Examinations*

Persons who have completed high school (or its equivalent) at least three years prior to taking the CLEP exams may be awarded Elizabethtown College credits according to the following standards.

- a. All General Examinations must be successfully completed prior to the achievement of sophomore status (30 or more recorded college credits).
- b. Up to 29 credits may be awarded for scores at the fiftieth percentile or higher on the General Examinations. None of the credits may duplicate college credits already recorded on the transcript or credits for course work in progress at the time of the examination.
- c. For the Natural Science Examination, a maximum of eight credits will be awarded for scores at or above the fiftieth percentile. Three of these credits may be applied to the Core Program requirements in Natural World.

- d. For the examinations in Humanities, and Social Sciences and History, a maximum of six credits for each examination will be awarded for scores at or above the fiftieth percentile. Up to three credits from each area may be applied to the corresponding requirement in the Core Program.
 - e. For the English Composition and Mathematics Examinations, a maximum of three credits will be awarded for scores at or above the fiftieth percentile. These credits may not be applied to the Core Program.
2. *Subject Examinations*
Credit will be granted for scores at or above the fiftieth percentile. Subject Examinations in an area in which the student will take additional work (either by requirement or elective) must be successfully completed prior to enrolling in college courses in that subject area.

Challenge Testing

Challenge Testing is a comprehensive term encompassing all tests prepared and/or administrated by Elizabethtown College faculty.

There are two types of Challenge Tests:

1. **Tests for Academic Credit** are *Challenge Examinations* in which a regularly admitted Elizabethtown College student requests to be examined for credit in a particular course in the Academic Program. Requests for Challenge Examinations must be approved by the chair of the department in which the course is listed. Practicums, internships, and research courses are excluded from the Challenge Examination option as are Freshman Seminar and Junior/Senior Colloquium in the Core Program.
2. **Tests for Placement and/or Waiver** are those given for placement in a course sequence such as those given in modern languages and mathematics. No credit is awarded for such testing.

All Challenge Testing is graded on a pass/no pass basis. A grade of *pass* indicates that the credit and/or advanced placement is to be awarded.

Challenge Tests given at the initiative of the College are administered without fee to the student. There is a per test fee for Challenge Tests given at the request of the student. The fee is for the test itself and is charged regardless of the test results. The fee for a test for academic credit is \$85.00. In addition, 50% of the appropriate part-time tuition rate in effect at the time the test is administered is charged for academic credit awarded as a result of performance on Challenge Tests.

The fee for a Test for Placement and/or Waiver is \$55.00.

Placement Testing

During the summer orientation program all new students take a mathematics placement test. In addition, students with two, three, four or five years of language instruction must take the appropriate modern language placement test. Students who have studied a language less than two full years, and students who have never studied a language, do not take the test. The languages tested are French, German and Spanish. If students have studied more than one of these languages, they take the placement test in the language which they have had the most intensive study or the language in which they wish to pursue further at the college level.

Students who wish to use a modern language to fulfill the Foreign Cultures and International Studies Area of Understanding in the Core Program complete either Modern Language 112 or 211 or 212. Language background and placement test results determine the appropriate level of college language study (112, 211 or 212). Students who demonstrate competence at the 111 level enroll in 112. Students who demonstrate competence at the 112 level enroll in 211. If competence is demonstrated at the 211 level, the appropriate course is 212.

The mathematics placement test determines placement in Math 011, Intermediate Algebra, or a 100-level mathematical analysis course. Students placed in Math 011 must successfully complete this course before enrolling in other mathematics or mathematical analysis courses.

College Assessment Programs

Because the College needs to evaluate its programs regularly, students will be expected to participate in various formal and informal assessment projects. Examples of such activities include: having a day set aside for testing during the academic year, completing standardized and other tests, completing questionnaires, inventories, and the like, and participating in alternative assessment strategies, such as portfolio evaluations.

The Student's Program

The student's academic program in the first two years is largely intended to fulfill the requirements of the Core Program, which provides a broad education. In the junior and senior years, most curricula afford time for a wide range of electives in addition to the prescribed courses required in a major program.

Academic Advising

Each student who is enrolled in a degree program is required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major department. Advisors are

assigned for majors, second majors, and minors. (Certain non-degree students are also assigned advisors.)

Freshman Advising Program. The Freshman Advising Program is designed to touch on all aspects of the freshman experience. The goal is to assist freshmen in realizing the maximum educational benefits available to them by helping them to better understand themselves and to learn to use the resources of the College to meet their special educational needs and aspirations. Course selection is included but is not the primary task to be accomplished.

Upperclassman Advising. Upperclassmen who have declared a major are assigned an academic advisor from their major department. Upperclassmen who have not yet declared a major are assigned an advisor from the Office of Personal and Career Counseling Services.

All advisors work closely with students during the preregistration period for course selection for the coming semester. Consultation with the advisor also occurs during the schedule change period and the drop-add period at the beginning of each semester. Departmental advisors also provide assistance in regard to graduate or professional school and/or career planning.

Student Responsibilities

Students are required to consult with their major advisors as to course selection, course sequences, graduation requirements, etc. (Consultation with the second major or minor advisor is an expectation but not a requirement.) Preregistration Course Request Sheets, Request for Schedule Change forms, and Drop/Add forms require the major advisor's signature, as do certain other forms and documents from the Office of Registration and Records.

The advisor's signature on various documents indicates that the student has consulted with the advisor; *however, it is the student's responsibility to ensure that all graduation requirements have been met and that other requirements, regulations, or deadlines have been observed.*

Advising sheets for academic majors and minors are available in the Office of Registration and Records. These sheets are helpful in noting the completion of program requirements.

Declaration and Change of Major/Minor

Students are required to complete a major. In addition, students have the option of pursuing a second major and/or one or more minors outside their major discipline.

Declarations and changes of majors and minors are initiated by the student and facilitated by the Office of Personal and Career Counseling Services. When a change of major or minor occurs, a student's records are transferred from one academic department to another.

Change of Personal Information

Any change of name, address, telephone number, or marital status must be reported in writing to the Office of Registration and Records immediately. This information must be kept current so that there will be no delay in receipt of information from the College.

Changes of name, social security number, or sex require legal documentation.

Full-time/Part time Status

A student taking 12 or more credits per semester at Elizabethtown College is considered a full-time student and pays full tuition and fees. A student taking fewer than 12 credits per semester pays the regular semester credit rate plus applicable fees, and receives a library card and full use of the library facilities.

The National Collegiate Athletic Association regulations stipulate that a student must carry a minimum of 12 credits per semester to be eligible for intercollegiate athletic competition.

Course Load

Since the completion of 125 credits of work is required for a bachelor's degree, a student who plans to graduate in four years must complete satisfactorily an average of approximately 16 credits for each of eight semesters. However, some students wisely elect to take a lighter academic load in order to do better work and choose to attend a summer session or a part of a fifth year.

Overload Credits

Students may carry up to 17 credits of course work in a semester or nine credits in a seven-week summer session. Students desiring to take credits in excess of these limits must have achieved a cumulative grade point average of 2.7 and have the approval of the associate dean of the faculty. The maximum load is 19 credits in a semester or 10 credits in a seven-week summer session. An additional tuition fee is charged for credits in excess of 17 credits in a semester. A petition form for overload credit is available in the Office of Registration and Records.

Repeating Courses

Courses which may be repeated (see below) must be taken at Elizabethtown College. The most recent grade is final and is used in the calculation of semester and cumulative averages. When repeating a course, a student must file the appropriate repeat registration card in the Office of Registration and Records. Failure to do so will result in a duplication of credits carried, a possible delay in graduation, and a decrease in the cumulative grade point average.

Courses which may be repeated are as follows:

1. A student may repeat any course in which the student receives an *F* or *NP*.

2. Ordinarily a student may not repeat a course in which a grade of *D* is earned. However, upon the request of the student's advisor and the approval of the student's major/minor department chair, a student may repeat a course in the major/minor, a course required by the major/minor, or a course that is prerequisite to a Core Program requirement. *The student must repeat the course in which the D grade was received within one year of the original enrollment in the class* (or the next semester in which the course is offered if the course is offered less frequently than once a year).

3. A course in which a *D* or *F* was earned must be repeated in the same manner in which it was originally enrolled.

Auditing Courses

Students in good academic standing (2.0 or better) may elect to audit courses provided: (1) they do not preempt regularly enrolled students; (2) they have the permission of the professor teaching the course.

The requirements for the audit are determined by the professor. Upon completion of all such requirements, the audit is posted on the student's permanent record card. Audit courses carry neither academic credit nor grade.

Audit credits are included in the total credits to determine full-time status and overload charges. A fee is charged on a per credit basis for part-time students who wish to audit courses. Auditors, both full-time and part-time, must also pay any additional fees for labs, studio supplies, and other direct costs. Students may add a course for audit or change a course registration from audit to credit during the first week of class only. Change of course registration from credit to audit cannot be made after completion of the fourth week of the semester. Once a course has been audited, it may not be taken for credit. Likewise, a course that has been completed for credit may not be repeated and recorded as an audit course.

Transfer of Credits

An Elizabethtown College student who wishes to transfer credits to Elizabethtown College must obtain permission in advance from the Office of Registration and Records. The College transfers credit (but not grades or quality points) for course work taken at another regionally accredited institution for which a grade of C- or better is obtained. The College is not obligated to accept course work for which written permission was not obtained *prior* to enrollment at another institution.

Students who have achieved junior status (60 credits) either through work at Elizabethtown College or through a combination of work at the College and another institution are not permitted to transfer additional credits from a two-year institution to the College. Such students may transfer credits from four-year institutions, but only upon the prior approval of the director of records. Students must request that the registrar's office of the transferring institution send an official transcript to the Office of Registration and Records at Elizabethtown College.

Facsimile (fax) copies and student delivered transcripts will not be accepted.

Students desiring to have a transcript of credits sent from Elizabethtown College to another institution must make the request in writing to the Office of Registration and Records, in person or by mail, at least one week prior to the date needed.

The records of transfer students from non-accredited and National/American Association institutions are evaluated on an individual basis.

Transcripts

Two transcripts of record are provided free of charge to students in regular attendance and of freshman, sophomore, or junior status. Seniors receive a maximum of five transcripts of record free of charge when applying to graduate/ professional schools or for employment. Two copies of the final record are also available free to each student after graduation. A charge of \$2.00 per copy is made for all other transcripts. No transcripts of record are furnished to students whose account is not paid in full.

Transcript Requests must be received by the Office of Registration and Records at least one week prior to the date needed. Federal law requires that all requests must be made **in writing by the student**. Neither telephone requests nor facsimile (fax) requests can be honored; nor can parents, friends, spouses, or potential employers request transcripts.

Transcript request forms are available in the Office of Registration and Records; however, letters will be accepted in lieu of the request form. All requests must include:

1. The name(s) and address(es) to which the transcript is to be sent.
2. The dates of attendance at Elizabethtown College.
3. Student's full name (including maiden name, if applicable).
4. Student's signature.
5. The \$2.00 fee, if applicable.

Transcripts issued directly to the student are stamped "STUDENT COPY" and may not be acceptable to other institutions or potential employers.

Elizabethtown College does not send or accept facsimile (fax) copies of transcripts.

Registration

Students are required to register for classes on those days designated on the College calendar. Students registering later than the days specified are charged a late registration fee. No registrations are accepted after the first week of a semester.

A student may register either as a regular or a non-degree student, and as a full-time or part-time student. Regular students only are degree candidates, and they must be in an approved major.

A student registers for courses – not for a time or a professor. There is no guarantee that a student will be

registered for every course at the time requested.

Many courses have prerequisites, and students are reminded of their responsibility for meeting all prerequisites and for taking courses in proper sequence.

Preregistration

To preregister for the next semester, a student must have met all financial obligations, including the payment of any required preregistration deposit. Students who do not preregister during the preregistration period cannot be guaranteed space in the residence halls or classrooms.

Students preregister for the fall semester in April. Preregistration for the spring semester takes place in November. Master schedules and course request sheets are furnished to the student approximately three weeks prior to the preregistration period to allow ample time to make an appointment with the advisor. Students who fail to preregister before the close of the preregistration period are charged a late preregistration fee.

Evening students should check with the Office of The Center for Continuing Education for details about registration.

Registration Holds

A student's registration or preregistration may be delayed as a result of items such as unpaid account balances, incomplete academic records, disciplinary sanctions, or incomplete health records. For full-time students, the health record must include a Health Services Physical form and evidence that all required immunizations have been received.

Schedule Changes

Students who have preregistered may make changes on a space available basis. Schedule change request forms are available in the Office of Registration and Records.

Change of Registration

Courses may be added within the first week of a semester and may be dropped without academic penalty during the first four weeks of a semester. Course drops and adds must be approved by the academic advisor and completed through the Office of Registration and Records. A student is not withdrawn from a class simply by discontinuing attendance or by notifying the professor. The completion of any registration change is the responsibility of the student, not the faculty member.

Adding Courses

Students may add courses to their schedule during the first week of a semester. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; students are not considered to be registered until this is done.

Dropping Courses

Courses dropped from a student's schedule during the first four weeks of a semester are removed from the student's academic record. Drop/Add request forms are available in the Office of Registration and Records. The completed form must be signed by the academic advisor and returned to the Office of Registration and Records; the course drop is not complete until this is done.

Class Absences

Class Attendance

Class attendance policy is determined individually by the faculty members. It is the position of the College that the above-average student should be given some freedom of judgment as to attendance needs, while the average student must, of necessity, be encouraged or required to maintain a record of regular attendance.

Each faculty member announces his or her attendance policy at the start of each semester. A professor or the College may dismiss a student from a course for excessive absences. Such dismissals in weeks 1-4 of the semester result in removal of the course from the student's record; after the fourth week, a grade of WF is recorded for the course. A student may appeal to the Academic Standing Committee for reinstatement to the course.

Students are responsible for consulting with the professor in the case of absences due to ill health or other personal problems.

Long-Term Absences

Long-term absences from all courses/campus may result in mandatory withdrawal from the College. After 15 consecutive class days of absence from all classes, a student is considered to have withdrawn from the College. (Students absent for verified medical reasons will be granted a Medical Withdrawal (see below).)

Withdrawal Policy

Withdrawal from Classes

Students withdraw from classes through the Office of Registration and Records. The course will not appear on the permanent record if the student withdraws on or before the end of the fourth week of the semester. From this time to the end of the eleventh week, a withdrawal will result either in a grade of W or WF. All withdrawals after the end of the eleventh week of the semester receive grades of WF unless the withdrawal is from College and is for medical reasons, in which case a W is recorded for each course. A student may not withdraw from individual courses for medical reasons. A grade of WF is calculated into the student's average as though it were an F.

Withdrawal from College

Students who withdraw from the College during a semester also withdraw from all of their classes for that semester. Full-time students withdraw from the College through the Office of Personal and Career Counseling Services; part-time students withdraw through the Office of Registration and Records. Students who withdraw during the semester are expected to leave the campus as of the effective date of their withdrawal.

For purposes of billing, room reservation, academic responsibility, etc., the effective date of withdrawal is the date on which the completed official notice is returned to the Office of Personal and Career Counseling Services or the Office of Registration and Records. A student who withdraws without notification receives no refunds and may incur the full room penalty. Failure to comply with withdrawal procedures may result in loss of the privilege of readmission to the College and the right to the release of a transcript of credits earned.

Medical Withdrawal

A student may withdraw from the College for reason of a serious illness or similar, medically-related circumstances. Medical Withdrawal assumes an incapacity that prohibits acceptable academic performance, not simply a hardship or inconvenience. Such withdrawal requires written verification from a physician. Upon receipt of verification, a proportionate refund is granted.

Medical Withdrawal is withdrawal from the College and, therefore, from all courses. A student does not selectively withdraw from individual courses under the rubric of "medical withdrawal."

Leave of Absence

A student may take a leave of absence from the College to study in an approved off-campus program.

To arrange a leave, a student should contact the faculty coordinator or director of the appropriate program. Application must be made no later than the preregistration period of the semester prior to the one in which the leave begins. Administrative fees for off-campus programs are payable at the time a student applies for the leave. A leave is approved upon the student's acceptance into the program.

Preregistration information is sent to students on leave approximately March 15 and October 15. The preregistration form and a \$100 deposit must be returned to the Office of Registration and Records by May 1 or December 1 to ensure a place in the College and in courses.

Readmission

Students who leave the College in good academic standing (minimum 2.0 cumulative grade point average) gain readmission by written request to the Office of Registration and Records. Students who leave the College while in

academic difficulty (below 2.0 cumulative grade point average) must petition the Academic Standing Committee for readmission.

Credits, Grades and Quality Points

Credit

Credit is indicated in terms of the semester hour. Each semester hour unit signifies work completed in one 50-minute recitation, or two or more 50-minute laboratory periods per week for a semester of 15 weeks, or an equivalent learning experience.

Grades

Grades are reported as A, B, C, D, F. Plus and minus distinctions are made. In addition, designations of I, W, WF, P, NP and AUD are used in appropriate situations.

Grade definitions are as follows:

A	Distinguished
B	Above Average
C	Average
D	Poor
F	Failure
I	Work Incomplete
W	Withdrawal from course
WF	Withdrawal failing
P	Pass
NP	No Pass (failure)
AUD	Audit

Grades submitted to the Office of Registration and Records are considered to be official at the time submitted. Official grades can be changed only by successful appeal under the College's Grade Appeal Policy or by an instructor's petition to the dean of the faculty to correct a documented grading error. Grade appeals and evidence of grading errors must be submitted within 30 days of the date on which the grade was formally issued from the Office of Registration and Records. Exception to the 30-day time limit requires formal petition to and approval of the Academic Standing Committee.

Quality Points

A 4 point quality point system is used. Quality points are assigned as follows:

Letter Grade	Quality Points per Semester Hour of Credit
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0

C-	1.7
D+	1.3
D	1.0
D-	0.7
F, WF	0.0

Grade Point Average Calculation

The grade point average is dependent upon the credits attempted and the quality points earned. To determine the grade point average for a semester, multiply the credits for each course by the quality points for the grade earned in the course, sum the quality points and divide the total by the total credits attempted in the semester. Courses in which a grade F or WF is received are included in the calculation. Courses in which a grade of W or I is recorded are excluded, as are Pass/No Pass and Audit courses.

The cumulative grade point average, and the grade point average in the major and minor are calculated in the same manner as the semester grade point average. All courses taken that could fulfill a requirement for the major, whether in excess or not, are used for the grade point average calculation.

Incomplete Grades

A grade of "I" may be obtained by making a formal request to the professor of the course in question. The student and the professor must sign a written agreement which specifies the nature and the quantity of the work to be completed and the projected date of completion. Grades of "I" are assigned for *extenuating circumstances* only. They are not given simply to allow additional time to complete required course work or to improve course grade. In addition, a professor may use the "I" in cases of suspected academic dishonesty.

All grades of "I" received in the fall semester must be removed by April 1. Those received in the spring semester or summer session must be removed by October 1. Failure to do so results in a grade of "F".

Pass/No Pass Grading

Courses registered on the Pass/No Pass basis earn credits (for grade of P), but are not assigned quality points. They are not included in the calculation of the grade point average.

Students may elect to take Physical Well Being activity courses on a Pass/No Pass basis. In addition, students may select one other course per semester to be graded in this manner under the following conditions:

1. A student must currently be of junior or senior standing (60 or more credits).
2. The cumulative average must be 2.75 or higher.
3. The selected course may carry no more than four credits and **must be a free elective**. It may not satisfy a Core Program requirement, and may not be a course that could fulfill a requirement for the student's major or minor.
4. No more than four courses in total (excluding

Physical Well Being) may be taken under this grading option.

Pass/No Pass registration forms are available in the Office of Registration and Records. Once a course is registered under the Pass/ No Pass option, it may not be changed. Grades of D- or higher are recorded as Pass; grades of F are recorded as No Pass.

Early Warning System

Mid-term grade reports are not issued. However, an early warning system is used. Students carrying D or F grades in 100 or 200-level courses at the end of the fifth week of the semester are notified of their deficient performance. Students are encouraged to consult with their instructors and to make use of Learning Center resources in order to improve their performance.

Final Examination Policy

All academic courses are expected to conclude with a final examination administered during the assigned time of the examination period. **Within the last three meeting days for classes (not for any individual course) prior to final examinations, no unit tests or quizzes of any type may be administered. Due to the structure of courses involving laboratory examinations/practica, a laboratory examination/practica can be given during these final three days prior to final examinations. In addition, major papers and projects can be assigned due dates that fall within the last three meeting days for classes, providing the due dates are specified in the syllabus.**

A laboratory section, an advanced seminar – where an assigned paper or project is the major activity, a performance class – where a recital or similar artistic performance is required, an internship, or a practicum may or may not have final examinations depending upon the judgment of the instructor. Any faculty member seeking an exception to the final examination rule for an academic course shall first secure the approval of the department chair and then that of the provost.

Students as well as faculty members are expected to abide by the published examination schedule. However, students with three examinations in one day may request of a professor that one examination be rescheduled during examination period. There is no obligation on the part of the faculty member to reschedule the examination. All requests for rescheduling an examination must be made at least five class days before the start of the final examination period. Students with four examinations in one day may request that one or two of the examinations be rescheduled, following the same procedure. When a scheduling conflict cannot be resolved between faculty member(s) and student, the student may take her or his case to the provost.

Class Standing

The student's class standing is determined on the basis of the number of credits earned. After earning 30 credits, a student is considered a sophomore; with 60 credits, a junior; with 90 credits, a senior.

Rank in Class

Class rank is calculated for students pursuing degree programs. The calculation is done once a year and is based on the credits, grades, and quality points earned at Elizabethtown College. Class ranks for the freshmen, sophomore, and junior classes are determined at the completion of the spring semester. Rank in class for graduates is also determined after the spring semester and includes graduates from the previous summer and fall as well as from the current spring semester.

Academic Standing

Academic Good Standing

Students in academic good standing maintain a minimum 2.0 cumulative grade point average.

Academic Probation

Academic probation means that a student is in danger of being dismissed from the College for academic reasons. Students who fall into the following categories are placed on academic probation:

Semester hours		Cumulative
Attempted	with	Grade Point Average below:
1 - 18		1.70
19 - 36		1.80
37 - 54		1.90
55 - 72		1.95
73 or more		2.00

A student on academic probation normally should limit his or her academic load to four courses or 13 credits, whichever is less, in any semester in which the probation exists. The summer maximum should be two courses or seven credits.

Academic Dismissal

The College, upon recommendation of the Academic Standing Committee, may at any time dismiss from the College a student who is experiencing academic difficulty. A student should be aware that all cases are decided individually, and that poor academic performance may result in dismissal at the end of any semester.

A student who is in academic difficulty (below 2.0 cumulative grade point average) may be requested by the Academic Standing Committee, in consultation with the student, to enroll in a special or particular set of courses

and to become involved in testing, counseling, or other developmental activities. Satisfactory performance by the student in such assignments may be interpreted by the Academic Standing Committee as satisfactory progress and may make it unnecessary for the Committee to recommend dismissal.

Readmission of Students Not in Good Academic Standing

A student who leaves the College while in academic difficulty (below 2.0 cumulative grade point average) must petition the Academic Standing Committee for readmission.

A student who is readmitted to the College after an absence of *five successive years* may, upon fulfilling certain requirements, have previous grades of *F* removed from the cumulative grade point average. For full information, the student should consult with the registrar.

Individual Program Adjustments

Academic departments reserve the right to counsel any student out of a major or minor for academically-related reasons. A student has the right to appeal such departmental action to the provost, who will direct warranted appeals to the Academic Standing Committee.

Academic Honors

Dean's List

A full-time student who earns a semester grade point average of 3.50 or better is regarded by the College as having performed with distinction, and that student is placed on the Dean's List of Honor Students for the semester.

College Scholars

A College Scholar is a currently enrolled student who, having completed at least 60 credits at the College, has achieved a cumulative grade point average of 3.75 or higher. Scholars are identified at the end of the spring term, and are publically recognized at the Convocation at the beginning of the following academic year. They are awarded a certificate and their status as College Scholar is recorded on their permanent record.

Graduation with Honors

At the time of graduation, a student who has achieved a cumulative grade point average of 3.50 is graduated *cum laude*; of 3.75, *magna cum laude*; of 3.90, *summa cum laude*.

A transfer student receives honors if the student earns a minimum of 60 credits at Elizabethtown College, is recommended for honors by the major department, and the grade point average meets the requirements listed above.

Departmental Honors

Departmental Honors are awarded to an outstanding graduate majoring/minoring in a particular department. Criteria include, but are not limited to, the following: the student must have a minimum of 3.50 for the major/minor grade point average and cumulative grade point average; possess outstanding abilities in areas such as research projects or papers, etc., and have pursued academically rigorous courses in the discipline. Departmental Honors are noted on the graduation program and academic transcript.

Special Privileges

Scholar's Privilege

A full-time student who appeared on the Dean's List of Honor Students during the preceding semester may, with the permission of the instructor, attend any class in the College on a space available basis as a scholar's privilege without registration or credit.

Departmental Student Privilege

A full-time or part-time junior or senior student may, with the permission of the instructor, attend any class within the student's major or minor department on a space available basis without registration or credit.

Graduation

The Ceremony

Graduation from Elizabethtown College is celebrated once each year in May. Students who complete all graduation requirements in the previous summer or fall, or the current spring semester are recognized in this ceremony. Students may participate in only one graduation ceremony.

Students majoring in music therapy and occupational therapy who have completed all course work may participate in the May graduation ceremony, but will not receive their diplomas until their respective clinical experiences are completed. Medical technology majors whose hospital work is graded and recorded on the permanent record card may participate in the May ceremony immediately preceding completion of their clinical year.

Honors are listed in the Commencement program for those students who have actually graduated or whose only remaining requirement is the non-credit clinical experience.

Credit Requirements

To receive a Bachelor of Arts or Bachelor of Science degree from Elizabethtown College, the student must earn a minimum of 125 credits. (Ma 011, En 011, and ESL 111 are not counted toward this credit hour graduation requirement.) In the case of engineering, medical technol-

ogy, and other special programs, the number of credits required is indicated in the program outline (see departmental listings for specific information).

No more than one degree is ever awarded to an individual by Elizabethtown College; however, students may complete a second major, a minor, or teacher certification subsequent to graduation.

Program Requirements

Students are required to complete successfully all requirements of the major and all of the Core Program requirements. The College does not guarantee graduation to any student unable to complete requirements of a specific program or academic major.

In addition to their major, students have the option of pursuing a second major and/or one or more minors. Second majors must include at least 15 credits not included in the first major. For each minor, the student must complete at least eight credits that are not used to fulfill the requirements of the major(s) or another minor.

Second majors and minors represent additional knowledge and interest in areas outside the first major. Therefore, second majors and minors must be selected in disciplines outside the first major. Major and minor disciplines are determined by the predominant course prefix of the major/minor course requirements. For secondary education majors, the major subject area is considered to be the discipline of the major.

Grade Point Average

To be eligible for graduation, a student must have a cumulative grade point average of at least 2.00, with a minimum average of 2.00 in a major (and a 2.00 in a minor if the minor is to be recorded on the student's transcript). A student transferring from other colleges must have an average of at least 2.00 in courses pursued in residence at Elizabethtown College.

On-Campus Credits

To meet graduation requirements, the student must earn on-campus credits as follows: 1) a minimum of 15 credits in the major, at least eight of which are at the upper level (normally 300 and 400 level), 2) at least 30 of the last 60 credits, and 3) the Junior/Senior Colloquium and at least one 200 level Core Program course.

To recognize completion of a minor on the transcript, a student must have completed at least nine credits of the requirements on the Elizabethtown College campus, and must have earned a baccalaureate degree at Elizabethtown College.

Note: Credits earned at the Dixon University Center in Harrisburg or in the Brethren Colleges Abroad program while the student is matriculated at Elizabethtown College, are considered on-campus credits.

Other Requirements

Graduation requirements are governed by the Academic Program dated four years prior to graduation, or, for major requirements, by the catalog in effect at the time of graduation, if the student so chooses. Transfer students are subject to the requirements of the catalog in effect when they begin studies at Elizabethtown College or, for major requirements, the one in effect at the time of graduation. In no case, however, may a student use a catalog dated more than four years prior to graduation to determine requirements for a degree, nor may a combination of catalog requirements be used.

Elizabethtown College will graduate only those students who meet the moral and financial obligations incurred in pursuit of their studies. The completion of the required number of semester hours does not in itself constitute eligibility for graduation.

The Office of the President must be notified by any student who plans to graduate in absentia.

It is the responsibility of the candidate for a degree to make formal written application for the degree to the registrar by February 15.

Academic Judicial System

Judicial Structure

Responsibility for judicial matters of an academic nature is assumed by the Academic Standing Committee and the Academic Review Committee.

The Academic Standing Committee is comprised of three faculty members, the associate dean of the faculty, and two counselors from the Office of Personal and Career Counseling Services who serve in an advisory capacity without vote in committee decisions. The committee handles matters pertaining to academic probation, academic dismissal, readmission, and deviations from the academic curriculum of the College.

The Academic Review Committee is comprised of three faculty members, two students, and one administrator appointed by the president. The provost serves as convener of the committee but is not a member and does not vote in decisions made by the committee. The committee handles matters pertaining to academic dishonesty and student appeals of course grades.

Academic Due Process

At Elizabethtown College, academic due process is understood to include the following student rights:

With Regard to Grading:

1. To receive a specific explanation of the manner in which a course grade was determined.
2. To appeal a course grade if the student believes that a grade was influenced by matters other than academic

performance, class attendance, and punctuality in submitting assignments.

With Regard to Academic Dishonesty:

1. When penalized for academic dishonesty, to receive a written notification specifying the nature of the infraction and the recommended penalty.

2. To request a hearing before the Academic Review Committee when found by a faculty member to be in violation of the standards of academic integrity and to receive a written statement from that board summarizing the findings of the board and its disposition of the matter.

3. To request a hearing before the Academic Standing Committee when recommended for academic dismissal due to cheating, plagiarism, or other violations of the standards of academic integrity.

4. To inspect any information on file in the Office of the Provost dealing with incidents of academic dishonesty attributed to that student.

Standards of Academic Integrity

Elizabethtown College assumes that students will act honorably. Students are asked to adhere to the Pledge of Integrity adopted by both the Student Senate and the Faculty Assembly.

A PLEDGE OF INTEGRITY

Elizabethtown College is a community engaged in a living and learning experience, the foundation of which is mutual trust and respect.

Therefore, we promise to represent as our work only that which is indeed our own, and we will strive to behave toward one another with civility and with respect for the rights of others.

Reflecting the Pledge of Integrity as adopted by both the Faculty and Students of Elizabethtown College, we pledge to refrain from all forms of lying, plagiarizing, and cheating. In recognition of this promise, on selected assignments we will sign a pledge stating: "I pledge to be honest and to uphold integrity throughout our community."

Academic Dishonesty—including cheating and plagiarism—constitutes a serious breach of academic integrity. All academic work is expected unequivocally to be the honest product of the student's own endeavor.

Cheating is defined as the giving or receiving of unauthorized information as part of an examination or other academic exercise. What constitutes "unauthorized information" may vary depending upon the type of examination or exercise involved, and the student must be careful to understand in advance what a particular instructor considers to be "unauthorized information." Faculty members are encouraged to make this definition clear to their students.

Plagiarism is defined as taking and using the writings or ideas of another without acknowledging the source. Plagiarism occurs most frequently in the preparation of a paper, but is found in other types of

course assignments as well.

Other forms of academic dishonesty include (but are not limited to) fabrication, falsification, or invention of information when such information is not appropriate. To knowingly help or attempt to help another student to commit an act of academic dishonesty is considered to be an equivalent breach of academic integrity and is treated as such.

Cases of academic dishonesty are reviewed individually and according to the circumstances of the violation; however, students who violate the standards of academic integrity can normally expect a grade of F in the course and/or possible dismissal from the College.

Procedures for Dealing with Cases of Academic Dishonesty

Instances Involving Coursework:

1. When an instructor discovers evidence of academic dishonesty an informal conference is scheduled promptly with the student or students involved.

2. If, after the informal conference, the instructor is satisfied that there is evidence of academic dishonesty, a second conference is scheduled with the student involved (in cases involving more than one student either individual or group conferences may be appropriate depending on the particular circumstances of the case). It is preferable that this conference take place in the presence of another faculty member. The student has the right to have a faculty member, another student, or a member of the Personal and Career Counseling Services present as an observer.

3. If, following the second conference, the initiating faculty member is satisfied that there is proof of academic dishonesty and if the infraction is serious enough to warrant a recommendation of penalty beyond repetition of the assignment or examination, the faculty member will, with the approval of the department chairperson or equivalent, give the accused student(s) written notification specifying the infraction and the recommended penalty. A copy of this notification is sent to the Office of the Provost. Should the department chair not be in agreement with the faculty member, and the matter not be resolved at the department level, both the faculty member and the department chair will give written notification, with rationale, to the provost. The provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.

4. The accused student(s) will have the alternative of accepting the recommended penalty or requesting a hearing before the Academic Review Committee. The request for a hearing must be presented in writing to the provost within five days of receipt of the notice of information.

5. The provost will review cases of academic dishonesty and exercise judgment as to whether a student found to be in violation of the standards of academic integrity should be recommended for dismissal from the College. If it is

the provost's judgment that academic dismissal is appropriate, the provost will notify, in writing, both the student and the Academic Standing Committee of his decision and the factors that influenced that decision.

6. The student will have the option of accepting the provost's decision or requesting a hearing before the Academic Standing Committee. The request for a hearing must be presented in writing to the chairperson of the Academic Standing Committee within five days of receipt of the provost's decision.

Other Instances:

All forms of dishonesty in academic matters are violations of the Standards of Academic Integrity and are the concern of the Academic Review Committee. Inappropriate actions, for example, lying to College officials or forgery of advisors' signatures, are violations equivalent to cheating and plagiarism in coursework. Such dishonesty will be dealt with following the general procedures set forth above. Cases are reviewed individually and according to the circumstances of the violation; however, possible penalties include suspension or dismissal from the College.

Grade Appeals

Grades are considered to be official at the time submitted by the faculty. Questions concerning grades must be called to the attention of the instructor immediately after the official grade report is received. Formal grade appeals must be submitted within 30 days of the date on which the grade was issued from the Office of Registration and Records. Exception to the 30-day time limit requires formal petition to and approval of the Academic Standing Committee.

Procedures For Grade Appeals

1. If a student believes that a final grade has been influenced by matters other than academic performance, class attendance, and punctuality in submitting assignments, the student may request an informal conference with the instructor to discuss the matter.

2. If the outcome of the informal conference is not satisfactory, the student may submit a request in writing for a meeting on the matter to the department chairperson (or another faculty member in the department in instances involving the chairperson). For the meeting, the student will prepare a written statement outlining the basis for the appeal.

3. The decision regarding the course grade in question will be made by the faculty member in consultation with the chairperson (or the other faculty member in the department in instances involving the chairperson). The student will receive immediate, written notification of that decision. Should the faculty member and the department chair not be in agreement, and the matter not be resolved at the department level, both the faculty member and the department chair will give written statements to the

provost explaining the reasons for upholding or altering the grade. The provost will then review the matter and recommend action, and will inform the student, in writing, of the recommended action.

4. The student will have the alternative, within ten days of the notice of the decision, of accepting the grade or submitting a further appeal, in writing, to the provost.

5. The provost will review the detail of the appeal. The Academic Review Committee will hear warranted appeals as determined by the provost.

Continuing Education

Elizabethtown College provides a variety of programs for the continuing education of adults. Bachelor's degrees in accounting and business administration can be earned through evening study. WELCOME BACK, a special program for adults who have been away from the academic setting, provides daytime study opportunities for returning adults.

Diploma programs are available for college graduates who want to develop professional competence in careers outside their original college majors. Certificate programs are available in accounting and management for men and women who seek entry-level positions in those fields. All Elizabethtown College courses in the certificate programs can be used for further study leading to the bachelor's degree.

Elizabethtown College courses are also offered at the Dixon University Center, 2986 N. Second St., Harrisburg, PA 17110.

In addition to these traditional learning options, the College offers an external degree program in which adults work with faculty advisors to develop individualized study plans leading to Bachelor of Professional Studies or Bachelor of Liberal Studies degrees. Credits earned through classroom education, special studies, and testing are combined with learning achieved through life and work experience to satisfy the degree requirements.

Detailed information on continuing education programs is available from the Center for Continuing Education, Nicarry Hall, Elizabethtown College.

Special Programs

Fall Convocation

At the beginning of each college year, an academic convocation is held at which a prominent speaker addresses an important issue in higher education. In September 1993, the speaker was Rabbi David Saperstein, director of the Religious Action Center of Reform Judaism, Washington, D.C.

Other speakers have been the Reverend R. Maurice Boyd, noted preacher and writer, and the senior minister of the New Church of New York (1992); Jacob Neusner, graduate research professor of religious studies, University of South Florida (1991); Carlos Fuentes, the noted

Mexican writer, statesman and scholar (1990); Wallace T. MacCaffrey, Harvard University scholar and authority on British history of the 16th and 17th centuries (1989); and the Reverend William Sloane Coffin, president of SANE/FREEZE, Washington, D.C. (1988).

Lecture Series

Two lectures are sponsored at Elizabethtown College in which national and international leaders speak on political, ethical, social, and economic topics of major importance.

The Frank S. Carper Lecture on Ethics, Business and the Professions is an endowed lectureship named in honor of the late Frank S. Carper, an officer of the Valley Trust Company of Palmyra, Pennsylvania, a trustee of Elizabethtown College, and a free minister of the Church of the Brethren.

The 1992 Carper Lecturer was Arthur M. Schlesinger, Jr., the Pulitzer Prize winning historian and noted commentator.

Previous lecturers were the Reverend Andrew M. Greeley, writer, novelist, poet, journalist, and professor of sociology at the University of Arizona (1991); Michael Novak, director of social and political studies, American Institute for Public Policy Research, Washington, D.C. (1989); and James O. Pickard, Secretary of Commerce in Pennsylvania from 1982-86 and the chief executive officer of Globus Group, Inc., York, Pa. (1988).

The John F. Chubb Lecture on Business, Public Policy and World Affairs is an endowed lectureship named in honor of the late John F. Chubb, Class of 1961, who was a trustee of Elizabethtown College and a senior partner in the accounting firm of Chubb and Associates in Harrisburg and Middletown, Pennsylvania.

The 1993 Chubb Lecturer was Dr. David A. Ricks, vice president for academic affairs and professor of world business at "Thunderbird," the American Graduate School of International Management in Glendale, Ariz.

Previous lecturers were Rozanne L. Ridgway, president of the Atlantic Council of the United States and former ambassador to the German Democratic Republic and to the Republic of Finland (1991); W. Michael Blumenthal, chairman and chief executive officer of UNISYS and the U.S. Secretary of the Treasury from 1977-79 (1989); and the late Honorable Willy Brandt, chancellor of the Federal Republic of Germany from 1969-74 and the recipient of the Nobel Prize for Peace in 1971 (1988).

College Assembly

The College Assembly is a dedicated period on many Wednesdays at 10:00 a.m. throughout the academic year. The assembly consists of a series of diverse programs designed to enhance cultural awareness and to provide a forum for discussion of issues of common concern to the College community.

Course Descriptions

The courses offered by the College are arranged alphabetically by departments or programs.

Some departments offer majors or concentrations in more than one academic discipline.

For convenience, these academic disciplines are listed alphabetically in the text; the reader is referred to the appropriate department.

Accounting

See *Department of Business*, page 23.

Anthropology

See *Department of Sociology and Anthropology*, page 66.

Department of Biology

Professors Dively, Heckman, Hoffman
Associate Professors Laughlin (*Chair*), Polanowski
Assistant Professors Cavender, Murray

Bachelor of Science

The courses of the Department of Biology provide a foundation in basic concepts and principles involving the structural, functional, and environmental aspects of the living world. The courses provide the liberal arts student with a broad and unifying understanding of nature's life forms.

The department involves students in research studies with professors through senior seminars and independent study projects.

The Biology Department offers two majors:

Bachelor of Science in Biology. The curriculum prepares students for the rigors of graduate school, professional schools of medicine and allied health, and for biologically-oriented employment opportunities.

Bachelor of Science in Environmental Science. The curriculum prepares students for entry-level positions with environmental firms, industry or government agencies which require a knowledge of environmental principles and methodology as well as for entry into graduate

environmental programs. In addition to providing the student with a solid grounding in basic principles, they are exposed to the application of those principles in an intern program.

Biology

The Bachelor of Science: Biological Sciences Concentration prepares the student for a biologically-related profession or for graduate school. The specific requirements are Biology 111, 112, 212, 215, 215L, 311, 313, 313L, 324, 324L, 411, 412, and three additional courses in biology, including one course selected from 235 or 347, one course selected from 342 or 343, and one course selected from 321, 331, or 332. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; Mathematics 117 or 121, and 151; and a foreign language through the 112 level or one Computer Science course selected from 115, 120, or 121.

The Bachelor of Science: Medical Concentration prepares the student for entry into professional schools of medicine or related fields. The specific requirements are the same as those for the biology major except that students should select Biology 341 instead of 321, 331, or 332.

The Bachelor of Science: Allied Health Concentration prepares the student for entry after three years into the professional allied health science programs of Thomas Jefferson University, or another accredited, pre-approved program. The specific requirements are Biology 111, 112, 201, 202, 202L, and two additional courses in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101, 102; Mathematics 117 or 121 and 151; and Computer Science 115, 120, or 121. In addition, all allied health majors should consult closely with Dr. Robert Heckman to insure that the courses being taken are appropriate to fulfill an Elizabethtown College requirement and/or a requirement of the institution to which the student plans to transfer. All allied health students should select Psychology 105 and Sociology 101 to satisfy their Social World core requirement and English 100 or 150 to satisfy their Power of Language core requirement. In addition, physical therapy students must take English 185 or 282; a business, economics, or management elective; and Psychology 221 or 225. Nursing students must take Psychology 225. Occupational therapy students must take both Psychology 221 and 225 and a cultural anthropology course (111 or 202). In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program-biology requirements and the pre-allied health courses. The student then spends, if accepted, two years at Thomas Jefferson University (three years for Physical Therapy) in Philadelphia (or another accredited, pre-approved program). After completing sufficient credits, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College. After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson

University (or another accredited college or university) will award the bachelor of science degree in one of the allied health areas. If the student elects to remain at Elizabethtown College for his or her senior year, the specific requirements in addition to the above are: Biology 212, 215, 215L, 311, 313, 313L, 411, and 412. For further details, contact Dr. Robert Heckman.

The Bachelor of Science: Secondary Education Concentration prepares the student for the receipt of Pennsylvania Secondary Education Certification within the framework of the biology major (see above). This major program provides a strong background in the sciences while simultaneously fulfilling the requirements for secondary teaching certification. The specific requirements are Biology 111, 112, 212, 215, 215L, 313, 313L, one course selected from 321 or 324-324L, and two additional courses in biology. Other course requirements are Chemistry 113, 114, 213, 214; Physics 101 and 102; one course in Earth Science; Mathematics 117 or 121, and 151; Education 205, 230, 305, 415, and 473. Persons interested in this concentration should consult with Dr. Frederic Hoffman.

Environmental Science

Three concentrations are available:

Environmental Toxicology Concentration is for the student interested in investigating the chemical and biological systems which influence the movement of contaminants through biological systems and their effects in the environment. In addition to the universal requirements (below), students are required to take Biology 215, 215L, 317, 324, and 324L. Suggested electives are Chemistry 323 and 324; Political Science 366; Business Administration 330; and either Computer Science 115 or 120.

Environmental Resource Management Concentration is for the student interested in application of ecological theory to the management of terrestrial and aquatic ecosystems. In addition to the universal requirements (below), students are required to take Biology 215, 215L, 317, 324, and 324L; and Earth Science 112 or 215. Suggested electives are Computer Science 115 or 120; Political Science 366; Business Administration 330; and Economics 101.

Environmental Policy Concentration is for the student interested in examining and evaluating current and proposed environmental policies. In addition to the universal requirements (below), students are required to take Business Administration 330; Economics 101; and Political Science 111 and 366. Suggested electives are Computer Science 120; Economics 102; and Political Science 112.

The universal requirements for the Environmental Science major are Biology 111, 112, 313, 313L, 362, 371, 411, 412, and one course from Biology 235, 331, or 347. Other requirements are Chemistry 113, 114, 213, and 214;

Mathematics 117 or 121, and 151; Physics 101; and Political Science 361, and 471 or 476.

A Minor in Biology provides course options from which a student can gain an overall view of the discipline of biology. The specific requirements are Biology 111 and 112 or 105-105L and 106-106L or 105-105L and 108-108L or 106-106L and 108-108L; 212 or 215-215L; one course from 201, 222, 235, 313-313L, 331, 332, 341, 342, 343, or 347; and one course from 202-202L, 321, or 324-324L. The total number of credit hours will be 18 or 20, depending on course selection. For a minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses. To aid in course selection and career counseling, Dr. Frederick Hoffman of the biology department will work with the student and the student's major advisor.

Cooperative Programs

The Biology Department also offers two programs leading to the receipt of a degree from cooperating institutions.

The Preforestry Program offers a biology concentration in the five year cooperative program in forestry and environmental management with Duke University, leading to a bachelor of science degree from Elizabethtown College and a master of forestry or master of environmental management degree from Duke University. Students interested in this program should see the detailed description in the interdisciplinary section of this catalog. Further information may be obtained from Mr. Ronald Laughlin.

Pre-allied Health Programs. In this program, the student spends the first two years at Elizabethtown College and transfers to Thomas Jefferson University, or another degree granting institution with an accredited program, for the junior and senior years.* The student should contact Dr. Robert Heckman very early to design a specific program which meets the requirements of a degree granting institution. The professional programs include areas of cytotechnology, dental hygiene, diagnostic imaging, diagnostic medical sonography/ultrasound, medical technology, nursing, occupational therapy, and physical therapy. Students should contact Dr. Heckman for specific pre-allied health courses for each of the above programs. These programs differ from the Biology major/allied health programs in that no degree is awarded from Elizabethtown College. Thomas Jefferson University awards the bachelor of science degree for each of the above programs. Students who may be interested in receiving an Elizabethtown College degree must complete the biology major and the Elizabethtown College core requirements.

Bachelor of Science in General Science Secondary Education is offered through the Biology Department. The curriculum prepares the student to receive secondary school general science certification. Students interested in this area should consult the detailed description in the interdisciplinary section of this catalog. Further details may be obtained from Dr. Frederic Hoffman.

*Physical Therapy requires two years at Elizabethtown College and three years at Thomas Jefferson University.

105* Principles of Biology

3 credits. **(Natural World)** Designed for the nonbiology major. An overview of basic biological principles and concepts, emphasizing their relevancy to our daily lives. Discussion of current issues and problems provides an understanding and respect for the basic mechanisms of life. *May not be taken for credit after completing Biology 111.* Prof. Polanowski.

105L* Principles of Biology Laboratory

1 credit. **(Natural World)** Designed to accompany Biology 105, these laboratory exercises demonstrate many of the important biological principles covered in the lecture course. *Prerequisite or corequisite: Biology 105*.* Prof. Polanowski.

106* Genetics, Evolution, and Man

3 credits. **(Natural World)** Designed for the non-biology major. A discussion of the fundamentals of genetics as they relate to man, followed by a study of the mechanics of evolution, their significance, and the evolution of man. Staff.

106L* Genetics, Evolution, and Man Laboratory

1 credit. **(Natural World)** A series of laboratory exercises intended to illustrate some of the principles of genetics and mechanisms of evolution. *Prerequisite or corequisite: Biology 106*.* Staff.

108* Living With The Environment

3 credits. **(Natural World)** Designed for the non-biology major, a discussion of the basic principles of environmental relationships and how living organisms play a role in those relationships and respond to changes in their environment. Current problems with pollution, hazardous wastes, energy, and population growth are examined in relation to those environmental principles. Prof. Laughlin.

108L* Living With The Environment Laboratory

1 credit. **(Natural World)** Includes field trips to a nuclear power plant and water and sewage treatment plants, testing for various contaminants in the environment, and exercises in measurement of energy consumption and environmental tolerance. *Prerequisite or corequisite: Biology 108*.* Prof. Laughlin.

111* Introduction to Biological Sciences

4 credits. **(Natural World)** The study of the chemical and cellular basis of life, animal anatomy and physiology, cellular reproduction, heredity, and animal development. For biology majors and those students taking additional biology courses. Hours: lecture 3, laboratory 3. Fall semester. *Cannot be taken for credit without the permission of instructor after completing Biology 105.* Staff.

112 General Biology

4 credits. The study of the evolution, diversity, and ecology of organisms, the animal kingdom, photosynthesis, plant anatomy and physiology, viruses, monera, and the plant kingdom. For biology majors and those taking additional biology courses. Hours: lectures 3, laboratory 3. *Prerequisite: Biology 111.* Spring semester. Staff.

201 Human Anatomy

4 credits. A study of human structure at the tissue, organ, and system levels. Particular attention is given to the correlation of structure to normal and abnormal function. Laboratory work involves dissection of a cat and human cadavers. Enrollment limited to occupational therapy, nursing, and medical technology majors. Hours: lecture 2, laboratory 4. *Prerequisites: Biology 111, permission of instructor.* Fall semester. Prof. Dively.

202 Human Physiology

3 credits. A functional study of cells, tissues, organs, and organ systems of man; emphasis on disorders as they relate to the understanding of normal function. Enrollment limited to occupational therapy, nursing, and medical technology majors. *Prerequisites: Biology 111, permission of instructor.* Spring semester. Prof. Dively.

202L Human Physiology Laboratory

1 credit. A study of selected cardiovascular, respiratory, renal, muscular, neural, and endocrine control mechanisms; emphasis on "hands-on" manipulation of instruments useful to the health profession student. *Prerequisite or corequisite: Biology 202.* Spring semester. Staff.

206* Biotechnology

3 credits. **(The Natural World)** Historical basic genetic principles will be examined in order to understand the modern manipulation of genetic material by genetic engineering. Emphasis will focus on the presentation of these discoveries to the non-scientist and the impact biotechnology will have on the world. *Prerequisite: Any 100-level Natural World course.*

212 Molecular Biology

3 credits. An integrated and comprehensive review of recent biological developments at the molecular level. Information, drawn from a wide variety of biological disciplines, concerning the interaction of biological molecules. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Polanowski.

215 Genetics

3 credits. A study of classical and neo-Mendelian principles of heredity. *Prerequisite: eight hours of biology or permission of instructor.* Fall semester. Prof. Heckman.

215L Genetics Laboratory

1 credit. Techniques of genetic experimentation. *Prerequisite or corequisite: Biology 215.* Fall semester. Prof. Heckman.

222 Immunology

3 credits. A basic course encompassing immunity, serology, immunology, immunobiology. Considered are antigenic specificity, humoral and cellular effector mechanisms, hypersensitivities, immunogenetics, tolerance and enhancement, tissue and tumor immunity, as well as recent methodological advances. *Prerequisite: Biology 112 or permission of instructor.* Spring, alternate years. Prof. Polanowski

235 General Microbiology

4 credits. A study of the morphological, physiological, and ecological characteristics of bacteria, as well as disease transmission and principles of control. A laboratory gives practice in the isolation and identification of bacteria. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 112 and Chemistry 105 or 114, or permission of instructor.* Spring semester. Prof. Cavender.

311 Biological Instrumentation and Research Methodology

4 credits. A practical and theoretical study of techniques, such as colorimetry, electrophoresis, ultracentrifugation, gas chromatography, tracer studies, electron microscopy, and flame photometry. Students prepare experimental plans illustrating the use of each instrument and perform a short-term experiment. Instrumentation emphasized. The research skills of planning, data collection, data analysis, and evaluation are stressed. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Prof. Cavender.

313 General Ecology

3 credits. The relationships between plants, animals, and their environment are investigated with regard to energy flow, mineral cycling, physical and chemical parameters, population changes, and community structure. *Prerequisite: 16 hours of biology or permission of instructor.* Fall semester. Prof. Laughlin.

313L General Ecology Laboratory

1 credit. Use of techniques and instrumentation for aquatic and terrestrial field studies, experimentation in such areas as population growth, competition, productivity, and mineral cycling. *Prerequisite or corequisite: Biology 313.* Fall semester. Prof. Laughlin.

317 Aquatic Ecology

4 credits. The study of physical, chemical, and biological relationships in aquatic ecosystems as they relate to the survival and growth of organisms. The course will include laboratory and field experimentation using local aquatic ecosystems. *Prerequisites: 15 credit hours of biology, 8 credit hours of chemistry.* Fall semester. Staff.

321 Plant Physiology

4 credits. A study of plant growth and development, including a discussion of photosynthesis, mineral nutrition, carbon and nitrogen metabolism, water relations, and plant hormones. Hours: lecture 3, laboratory 4. *Prerequisites: Biology 112, and Chemistry 105 or 114; or permission of instructor.* Spring semester, alternate years. Prof. Laughlin.

324 General Physiology

3 credits. A functional study of vertebrate organs and organ systems. Attention focused on similarities and specialization in relation to function, with emphasis on functional adaptations to the environment. *Prerequisite: Biology 112 or permission of instructor.* Spring semester. Prof. Dively.

324L General Physiology Laboratory

1 credit. An investigation of selected physiological mechanisms, employing spectrophotometers, datagraphs, spirometers, oscilloscopes, electrocardiographs, electrophoresis and animal surgical techniques. *Prerequisite or corequisite: Biology 324.* Spring semester. Prof. Dively.

331 Comparative Plant Morphology

4 credits. A comparative study of the plant kingdom with emphasis upon the various levels of organization, structure, and the development and relationships of the major plant groups. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Staff.

332 Taxonomy of Vascular Plants

4 credits. Examination of family characteristics useful in plant identification, using live material and transparencies. Taxonomic principles and distribution of plants discussed. Plant collection and some Saturday trips required. Hours: lecture 3, laboratory 4. *Prerequisite: Biology 112.* Spring, alternate years. Prof. Laughlin.

341 Comparative Anatomy

4 credits. A comparative and embryological study of morphology of selected representatives from the phylum chordata. Laboratory work involves dissection and demonstration of organisms from major chordate groups. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Fall semester. Prof. Dively.

342 Development and Evolution

3 credits. A basic study of animal development in selected representatives from phyla echinodermata and chordata. Also, the mechanisms underlying evolutionary processes and the emergence of humankind are studied. *Prerequisite: Biology 215, 215L.* Spring semester. Prof. Hoffman.

343 Histology and Biomedical Technique

4 credits. A basic microscopic study of vertebrate tissues. The laboratory includes biomedical techniques of paraffin sectioning, staining, and slide preparation. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112.* Spring semester. Prof. Heckman.

347 Invertebrate Zoology

4 credits. A study of the evolution of invertebrate animals from simple to complex forms, structural and functional similarities and differences, and the evolutionary trends necessary for an understanding of basic adaptive features. Hours: lecture 2, laboratory 4. *Prerequisite: Biology 112 or permission of the instructor.* Fall semester. Prof. Hoffman.

352 Applied Microbiology

4 credits. A study of microorganisms as they relate to their natural environment, food processing, and public health. Hours: lecture 2, laboratory 5. *Prerequisites: Biology 235, Chemistry 114.* Offered on demand. Staff.

362 Ecotoxicology

4 credits. An overview of contemporary issues in environmental science including the measurement of the ecological effects and fate of pollutants, environmental monitoring to detect ecosystem deterioration, the emerging discipline of restoration ecology, and related social and economic issues. The course will include laboratory and field experimentation and field trips. *Prerequisites: 15 credit hours of biology and 8 credit hours of chemistry.* Spring semester. Staff.

370-379 Special Topics in Biology

Variable credit. Courses of a specialized nature reflecting the interests

of the student and the instructor. Courses offered on a random basis. Staff.

371 Environmental Issues Seminar

1 credit. A multidisciplinary approach to current issues in environmental science. Topics of discussion will include the assessment of environmental risk, the development and implementation of environmental regulations, ecological economics and sustainable resource use, and the emergence of global environmental awareness. Students will be required to write a position paper on an issue of their choice. *Prerequisite: at least junior standing.* Fall semester. Staff.

411-412 Seminar in Biology

0 and 2 credits, respectively. An original research investigation planned and performed by students in consultation with faculty. A paper is written, and major findings are presented orally to faculty and peers. *Prerequisite: Biology 311.* Staff.

481-489 Independent Study

Variable credit. Designed to allow the student to do independent research in some phase of biology. *Prerequisites: 16 credits in biology, permission of the instructor and Department Chair.* Staff.

Education 305 Practicum in Secondary Education: Science

4 credits. Teaching science in secondary schools. *Prerequisite: Education 230.* Fall, alternate years. Prof. Hoffman.

Department of Business

Professors Buffenmyer, Gelson, C. Kreider
Associate Professors Evans, Gliptis, Hoppie, Neyer,
Pomroy, Stone, Trostle (*Chair*)
Assistant Professors P. Hill, Muston
Instructor Herr

Bachelor of Arts; Bachelor of Science

The Department of Business provides comprehensive programs of professional education for students who wish to achieve responsible positions in private and public business organizations. The department's goal is to provide students with an understanding of economic and business systems within the global economy and a multi-cultural society, and to provide them with a foundation for pursuing a career, graduate study, and continuing self-education in a business area.

Elizabethtown College, through its Department of Business, is nationally accredited by the Association of Collegiate Business Schools and Programs (ACBSP) for the following programs: (1) Bachelor of Science degree in Accounting, and (2) Bachelor of Science degree in Business Administration.

The Department of Business offers four majors:

Bachelor of Science in Accounting. Preparation for entrance into the profession of accounting (public, private, or governmental) requires a basic business core in addition to a proficiency in accounting. Because of the increased emphasis upon computer and quantitative

techniques by business, students are urged to elect additional courses in these areas.

Bachelor of Science in Business Administration. Preparation to become a business leader requires a broad background in business, a knowledge of the behavioral and social sciences, and the ability to use quantitative techniques in solving problems. The business core, the Core Program, and specific mathematics requirements provide this background. A student will gain further understanding of specific areas of business by concentrating in one or more of six areas: *accounting, computer science/business information systems, economics, finance, management, or marketing*. A student may also select a secondary area of concentration in *communications or international business*.

Business administration students may also major in forestry and environmental management. Students interested in this major should read the detailed description in the interdisciplinary section of this catalog.

A bachelor of science degree in accounting or business administration may be earned in the evening program of the College. This degree is not accredited by the Association of Collegiate Business Schools and Programs. For further information, see the Evening Session bulletin.

Bachelor of Science in International Business. Preparation for a career in international business requires an understanding of foreign cultures, language and cross-cultural interaction skills, a broad background in business, and skills in a functional area of business. A student must choose one of the following concentrations for the major: *finance, management, or marketing*.

Bachelor of Arts in Economics. Preparation for a career in economics requires a broad background in basic economic theory and an in-depth study of the quantitative tools important to the economist. In light of the emphasis on the quantitative approach to economic theory, students are advised to select courses in mathematics and computer science beyond those specifically required in the economics curriculum.

Economics is one of the major areas in the social studies major through which a student may receive certification to teach in secondary schools. Students with interests in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A minor in Economics and a minor in Business Administration are offered. For a minor in Economics, a student must complete the following 18 hours of course work: Ec 100, Ec 102, Ec 301, Ec 302, and two additional economics courses (excluding Ec 203). In consultation with the department advisor, the elective courses should be tailored to the student's area of interest.

For a minor in Business Administration, a student must complete the following 24 hours of course work: Ac 107, Ec 100, BA 265, BA 330, and four other courses offered in the Department of Business (excluding BA 251 and Ec 203). The elective courses should be selected after

consultation with the department advisor.

For either minor to be conferred, a minimum grade point average of 2.0 must be maintained in minor courses.

Students interested in business and technology are advised to read the description of the Industrial Engineering major offered by the Department of Physics.

Accounting

A major in accounting includes Accounting 107, 108, 205, 206, 207, 301, 305, 9 additional credits in accounting; Business Administration 215, 248, 265, 325, 331, 332, 355; Computer Science 120/MS-DOS; Economics 100, 102; Mathematics 151. No more than 75 credits may be taken in courses offered by the Department of Business.

Business Administration

A major in business administration includes Accounting 107, 108; Business Administration 215, 248, 265, 325, 330, 355, 495; Computer Science 120/MS-DOS; Economics 100, 102; Mathematics 117 or 121, and 151. A student must also choose one of the concentrations described below; twelve credits beyond those listed above must be taken in the concentration area (Nine of those twelve credits must be taken on the Elizabethtown College campus.) A student may also elect a secondary concentration. No more than 75 credits may be taken in courses offered by the Department of Business.

For an *Accounting Concentration*, a student must take Accounting 205, 206, and two other accounting courses from the departmental advising sheet. A *Computer Science/Business Information Systems Concentration* requires Computer Science 121, 135, 335, 340. An *Economics Concentration* requires Economics 301, 302, and two other economics courses from the departmental advising sheet, excluding Economics 203. A *Finance Concentration* requires Business Administration 424, 425, and two of the following: Business Administration 327, Economics 303 or 304. The *Management Concentration* requires Business Administration 369, 499, and two other management courses from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 319, 416, and two other marketing courses from the departmental advising sheet.

A *Secondary Concentration in International Business* requires competency in a modern language at the 112 level; Anthropology 111 or Business Administration 251; Political Science 245; Economics 307 or 311 or 312; and two other courses from the departmental advising sheet. A *Secondary Concentration in Communications* requires Communications 105, English 185, and three other courses from the departmental advising sheet.

International Business

A major in international business must complete the requirements for the four components of the program: Modern Languages, Foreign Culture and International Interaction, Business Studies, and Experiential Learning. Requirements for the Modern Language component

include 211, 212 of a modern language and a minimum rating of Intermediate High/1+ on the ACTFL scale. Requirements for the Foreign Culture and International Interaction component include Political Science 245, 341; Economics 100, 307; Business Administration 251, 337; and two other foreign culture and international interaction courses from the departmental advising sheet. Requirements for the Business Studies component include Accounting 107, 108; Computer Science 120; Economics 102; Mathematics 151; Business Administration 215, 265, 325, 497; and nine semester hours in one of the concentrations listed below.

For a *Finance Concentration*, a student must take Business Administration 327, 425, and one other finance course from the departmental advising sheet. A *Management Concentration* requires Business Administration 369, 367, and one other management course from the departmental advising sheet. A *Marketing Concentration* requires Business Administration 317, 319, and one other marketing course from the departmental advising sheet.

In order to meet the requirements of the Experiential Learning component, a student must study abroad for at least one semester with our BCA program or with another program approved by the Department of Business and the Office of Registration and Records.

Selective admissions for the major will begin with the freshmen class entering in Fall 1995. The objective is to limit freshmen enrollment to 25 students each year in order to maintain the quality of the program and to provide the necessary assistance for each student. Transfers are permitted from within the College or from other institutions on a space available basis.

Freshmen International Business majors are selected by Department of Business faculty. The selection process includes consideration of (a) motivation and aptitude, (b) preparation for international business study, (c) leadership and communications, and (d) interest in international business.

A prospective student must submit an application with all supporting documentation (including an essay demonstrating interest in international business) to the director of admissions before March 15. Applications received after March 15 will only be considered on a space available basis and will not be eligible for Department of Business scholarships.

Admission into the International Business Program does not imply that a student is guaranteed completion of the entire course of study. Generally, a student needs a 3.0 grade point average to qualify for a study abroad program which is a requirement for graduation in the major. For further information, please contact Dr. Jay Buffenmyer, program director.

Economics

A major in economics includes Economics 100, 102, 301, 302, 309, and 15 additional credits in economics: Computer Science 120, Mathematics 121, 151, and 252; nine credits of history; and nine credits of political science and/or sociology. In addition, at least one semester of a

modern foreign language at the 112 level or higher is required.

Accounting

107 Financial Accounting

3 credits. Basic accounting methodology and the structure and interpretation of financial statements used in external reporting. Profs. Neyer, Pomroy.

108 Managerial Accounting

3 credits. The use of information gathered from accounting records and other information sources to prepare internal reports and analyses in order to assist management in control and decision-making. *Prerequisite: Accounting 107.* Profs. Neyer, Pomroy.

205 Intermediate Accounting I

3 credits. A thorough study of various accounting concepts and generally accepted accounting principles; the application of these principles to the various assets and related revenue and expense accounts as presented in the income statement and balance sheet. Emphasis on valuation, classification, disclosure, and cut-off. *Prerequisite: Accounting 107 or permission of the instructor.* Fall semester. Prof. Neyer.

206 Intermediate Accounting II

3 credits. A continuation of 205. The principles of valuation, classification, disclosure, and cut-off applied to the various liability and owners' equity accounts as well as their related revenues and expenses. Topics include the study of various items affecting income determination, the statement of changes in financial position, and ratio analysis. *Prerequisite: Accounting 205.* Spring semester. Prof. Neyer.

207 Intermediate Accounting III

3 credits. A continuation of the study of theories and concepts used in the preparation of general purpose financial statements on a special topics basis. This course will concentrate on earnings per share, accounting for income taxes, leases, income presentation, and other topics of a specialized nature. *Prerequisite: Accounting 206.* Fall semester. Staff.

301 Introduction to Federal Income Taxes

3 credits. Provisions of the Internal Revenue Code which apply to individual taxpayers and sole proprietors. Students without a business background are encouraged to enroll. Fall semester. Prof. Pomroy.

302 Advanced Tax Accounting

3 credits. Further study of the Internal Revenue Code as it relates to partnerships, corporations, trusts and estates, and tax exempt organizations. State taxation of business is also covered. *Prerequisites: Accounting 301, 206 or permission of the instructor.* Spring semester. Prof. Pomroy.

305 Cost Accounting

3 credits. The quantitative aspects of managerial cost accounting, including cost-volume-profit analysis, budgeting, standard costs, and the concept of relevant costs. *Prerequisite: Accounting 108 or permission of the instructor.* Fall semester. Prof. Neyer.

306 Advanced Cost Accounting

3 credits. A continuation of the managerial emphasis on cost accounting, including capital budgeting, inventory control, joint-and-by-product costing, and process cost accounting. *Prerequisite: Accounting 305.* Spring semester. Prof. Neyer.

308 Accounting for Nonprofit Organizations

3 credits. The principles and uses of fund accounting; topics include the budgeting process, reporting requirements for general and special financial statements, and management's uses for control and decision-making as they relate to the general operating fund, as well as restricted and nonrestricted special funds. *Prerequisite: Accounting 108.* Spring semester. Prof. Neyer.

371-379 Special Problems

3 credits. Topics and problems of current relevance in accounting.

405 Auditing

3 credits. The legal and ethical responsibilities of an auditor, the methods and procedures used in gathering evidential material, and the auditor's report. *Prerequisite: Accounting 207 or permission of the instructor.* Fall semester. Prof. Neyer.

406 Advanced Accounting

3 credits. Accounting theory, income statement presentation, consolidations, partnerships, and foreign exchange accounting. *Prerequisite: Accounting 206.* Spring semester. Staff.

409 Contemporary Problems for C.P.A.'s

3 credits. Aspects of public accounting, including the latest standards and problems. *Prerequisites: Accounting 302, 405, 406; or permission of the instructor.* Spring semester. Prof. Pomroy.

471 Internship in Accounting

Variable credit. Work experience in accounting with either a public accounting firm, a business firm, or governmental agency. *Prerequisite: approval of the department chair.* Prof. Pomroy.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of accounting. *Prerequisites: approval of the department chair and the Provost.*

Business Administration

215 Principles of Marketing

3 credits. A study of the development and implementation of marketing strategies and practices with particular emphasis on the role of marketing in business and society. Profs. Herr, P. Hill.

248 Quantitative Techniques for Business

3 credits. Statistics, mathematical, and computer-based methods applied to business; including linear programming, decision theory, forecasting, network analysis, decision support, and expert systems. *Prerequisite: Mathematics 151.* Prof. Stone.

251* Cross Cultural Understanding and Interaction

3 credits. **(Foreign Cultures and International Studies)** An interdisciplinary study of the political, social, and economic environment of foreign cultures. Focuses on understanding the differences between foreign cultures and our own culture and on developing the interaction necessary to function effectively in the global community. Prof. Buffenmyer.

265 Principles of Management

3 credits. The process of using and coordinating technical and human resources in planning, organizing, staffing, motivating, and controlling to achieve an organization's objectives. Prof. Muston.

311 Principles of Marketing Research

3 credits. Employs scientific research methodology to solve marketing problems. Covers research design, data collection, sampling, and analysis. Stresses writing meaningful reports for managerial use. *Prerequisites: Business Administration 215 Mathematics 151.* Spring semester. Staff.

312 Principles of Advertising

3 credits. Involves the creative and business management aspects of advertising, including campaign strategy, mass media, the advertising agency, creative techniques, advertising research, and social accountability. *Prerequisites: Business Administration 215 and 319.* Fall semester. Prof. Gelson.

313 Retailing Management

3 credits. A study of retailing institutions, including institutional location, layout, managerial objectives and policies, consumer behavior, pricing and promotional strategies, consumer services, and expected trends.

Prerequisites: Business Administration 215, 265. Fall semester. Prof. P. Hill.

317 International Marketing

3 credits. Focus on marketing management problems, techniques and strategies in the framework of the international marketing area, and understanding different cultures and environments in order to establish effective marketing programs. *Prerequisite: Business Administration 215.* Spring semester.

319 Consumer Behavior

3 credits. The various internal and external influences on the consumer before, during, and after, a purchase. Emphasis is on understanding and predicting the individuals consumption patterns so that effective marketing strategies can be developed. *Prerequisite: Psychology 105.* Fall semester. Prof. P. Hill.

325 Business Finance

3 credits. Analyzes the management of funds of a business, including long- and short-term sources of funds, ratio analysis, capital budgeting, the cost of capital, and the dividend decision. *Prerequisite: Accounting 108.* Prof. Trostle.

327 International Finance

3 credits. The international finance environment in which economic policy and business decisions are made. An introduction to international finance, including the spot and forward exchange markets, the Eurocurrency market, international capital markets, international capital movement, and foreign exchange risk management. *Prerequisite: Business Administration 325.* Staff.

330 Legal Environment of Business

3 credits. The study of legal environment as it pertains to the business community and our national history and philosophy. Prof. Gliptis.

331 Business Law I

3 credits. Legal principles applicable to business, with emphasis on contract law. Includes the growth of law as an institution. Fall semester. Prof. Gliptis.

332 Business Law II

3 credits. The study of legal principles applicable to business with emphasis on partnership, corporation, and property law. *Prerequisite: Business Administration 331 or permission of the instructor.* Spring semester. Prof. Gliptis.

333 Legal Problems in Business

3 credits. An examination of statutes, problems, and issues in selected areas of the law appropriate to business. *Prerequisite: permission of the instructor.* Spring semester. Prof. Gliptis.

337 International Legal Environment

3 credits. An introduction to important laws, issues, and policies pertinent to the international environment of business. This course examines legal principles and regulations at the national and international level. Offered first time, Fall 1995. Prof. Gliptis.

355 Managerial Communication

3 credits. A study of the various communications techniques, incorporating the use of technology. Emphasis is on international communication, the analysis, ethics, and organization of materials for effective oral and written presentations. Prof. C. Kreider.

367 International Management

3 credits. The process of utilizing and coordinating human and technical resources in business which cross over national boundaries. The impact of cultural, economical and political forces on managerial practices in international organizations. *Prerequisite: Business Administration 265.* Fall semester. Prof. Buffenmyer.

369 Behavioral Theory in Management

3 credits. The interaction of the individual, group, and enterprise in the work environment, with special attention to the basic motivational, organizational, and leadership theories and their application. *Prerequisite:*

sites: *Psychology 105, Business Administration 265*. Fall semester. Prof. Muston.

371-379 Special Topics

3 credits. Topics and problems of current relevance in business.

414 Organizational Marketing

3 credits. An examination of the marketing of goods and services between businesses, institutions, and government with special emphasis on organizational buying, behavior, relationship management and promotional tools necessary to reach organizational customers. *Prerequisite: Business Administration 215*. Staff.

416 Marketing Management

3 credits. Integrating marketing theories and concepts for strategic planning and implementation. Case method emphasized. *Prerequisites: Business Administration 215, 319, and two other courses required for marketing concentration*. Fall semester. Prof. Hill.

424 Investments

3 credits. Emphasis on various classes of investments available to the investor; sources and uses of investment information; and security and market evaluation. *Prerequisite: Business Administration 325*. Fall semester. Prof. Trostle.

425 Problems in Financial Management

3 credits. An advanced course in corporation finance in which major topic areas such as capital budgeting, working capital management, leasing, mergers, and financing are examined in depth. Cases, readings, and more complex problems are used to illustrate the concepts covered. *Prerequisite: Business Administration 325*. Spring semester. Prof. Trostle.

466 Operations Management

3 credits. A critical study of the decision-making techniques used in operations management, emphasizing the practical application of scientific methods and management principles to production activities. Topics include: resource allocation, production cycles, job design, facility layout, production planning, quality improvements, and process control. Spring semester. Prof. Stone.

467 Human Resource Management

3 credits. Analysis of the principles, concepts and practices of procurement, development, maintenance, and utilization of personnel in organizations. *Prerequisite: Business Administration 265*. Spring semester. Prof. Buffenmyer.

468 Industrial and Labor Relations

3 credits. Analysis of employment relationships; union philosophy, structure and function; collective bargaining, and the interrelated interests of management, union, workers, and the community. *Prerequisite: Business Administration 369 or permission of the instructor*. Fall semester. Prof. Muston.

471 Internship in Business

Variable credit. Work experiences designed to supplement course work. *Prerequisite: approval of department chair*. Prof. Buffenmyer.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of business. *Prerequisites: approval of the department chair and the Provost*.

495 Business Policy

3 credits. A capstone course for the business major integrating concepts, principles, and practices from prior courses. Provides a comprehensive study of the interrelationships between management theory, problem analysis, and strategy formation for the contemporary enterprise. *Prerequisite: senior status*. Prof. Muston.

497 International Strategic Management Seminar

3 credits. A capstone course for the international business major, integrating concepts, principles, and practices from prior courses. Course will require group decision making and presentation, participation in a global computer simulation, and a major written comprehensive

case analysis. *Prerequisite: senior status in international business major or permission of instructor*. (Students who have successfully completed *Business Administration 495* cannot take this course for credit.) Offered first time, Spring 1996.

498 Seminar in Marketing

3 credits. Synthesizes the literature in consumer behavior, quantitative methods in marketing, and policy issues. *Prerequisites: Business Administration 215*. Fall semester. Prof. Stone.

499 Seminar in Management

3 credits. Advanced study focusing on current management concepts and contemporary problems in the business enterprise. Various topics are selected in the area of the students' interests. *Prerequisites: Business Administration 248, 265, 369, and two other courses required for the management concentration, or permission of the instructor*. Profs. Buffenmyer, Muston.

Economics

100 Global Economics

3 credits. Global economics is a principles or macroeconomics course designed to introduce students to the essential concepts of basic economics but with a strong emphasis on the global environment. Traditional topics of economic analysis, economic policy, and evaluation will be covered. In addition, each particular issue will be supplemented with an international trade or global economic example in order to help students appreciate the international dimension of the subject of economics. Fall semester. Profs. Evans, Hoppie.

102 Principles of Microeconomics

3 credits. Topics include elasticity, consumer behavior, production costs, market structures (competition, oligopoly, monopoly), and resource pricing. (*Does not fulfill Core requirement for students majoring in the business department.*) Profs. Evans, Hoppie.

203* The Greatest Economic Mystery Series

3 credits. (**Social World**) Through a series of four mystery novels, the authors weave important lessons of economics into an entertaining story of intrigue and deception. This combination of ingenious story line and important issues of macroeconomics and public affairs should provide a truly different experience for all students. Prof. Evans.

301 Intermediate Microeconomic Theory

3 credits. An in-depth study of corporate decision-making and resource allocation within the economic environment of free enterprise. *Prerequisites: Economics 100, 102; Mathematics 117 or 121*. Fall semester, even-numbered years. Prof. Evans.

302 Intermediate Macroeconomic Theory

3 credits. Development of macroeconomic theories of output, employment, inflation and growth, monetary and fiscal policies, and analysis. *Prerequisites: Economics 100, 102; Mathematics 117 or 121*. Spring semester, odd-numbered years. Prof. Hoppie.

303 Money and Banking

3 credits. A study of the United States money and banking systems, including commercial banking, the Federal Reserve System, monetary theory and policy, interest rates, money markets. *Prerequisite: Economics 100 or permission of the instructor*. Spring semester. Prof. Evans.

304 Public Finance

3 credits. An application of microeconomic theory to the problems of federal, state, and local taxation, expenditures and debt management. *Prerequisite: Economics 102*. Spring semester. Prof. Trostle.

306 Development of Economic Thought

3 credits. The historical and philosophical evolution of economic ideas and schools of thought from Smith, Ricardo, and Marx to Marshall and Keynes. Offered on demand. Prof. Hoppie.

307 International Economics

3 credits. The basic concepts of international trade, international payments, and commercial policy, combining economic theory, policy,

and practice. *Prerequisite: Economics 100.* Offered on demand. Prof. Hoppie.

308 Comparative Economic Systems

3 credits. Examination, criticism, and appraisal of alternative economic systems: capitalism, socialism, communism, and mixed economic system. *Prerequisite: Economics 100.* Offered on demand. Prof. Evans.

309 Introduction to Mathematical Economics

3 credits. An application of algebra and elementary calculus to further elaborate economic concepts and problems. *Prerequisites: Economics 100, 102; Mathematics 117 or 121.* Offered on demand. Prof. Evans.

311 Economic Development

3 credits. Examination and substantive analysis of the issues, problems, policies, and theoretical underpinnings of economic development in the Third World countries, including newly industrialized countries. The central thesis is growth, modernization and change with particular emphasis on area and country studies. Offered on demand. Prof. Hoppie.

312 International Political Economy

3 credits. Topical or area studies with international dimension or implications. Examination and analysis of the politico-economic and institutional factors/apparatus that shape economic interrelationships; the nexus between these and development strategies. Offered on demand. Prof. Hoppie.

371-379 Special Topics

3 credits. Topics and problems of current relevance in economics.

480-489 Independent Study

Variable credit. Independent study and research on a problem or topic in the field of economics. *Prerequisites: approval of the department chair and the Provost.*

Health Care

322 Health Laws, Issues, and Public Policies

3 credits. An examination of important laws, issues, and public policies pertinent to health care, with attention to regulatory authority, liability, and social policy. *Prerequisite: permission of the instructor.* Fall semester. Odd numbered years. Prof. Gliptis.

Department of Chemistry

Professors Hedrick, Proctor (*Director of Medical Technology Program*), Ranck, Schaeffer
Associate Professor Reeder (*Chair*)
Assistant Professor Hagan

Bachelor of Science

Professional Accreditation: The Department of Chemistry is on the approved list of the American Chemical Society, Committee on Professional Training. The affiliation of Elizabethtown with seven accredited hospitals is recorded with the National Accrediting Agency for Clinical Laboratory Sciences.

Chemistry courses contribute to both the liberal arts component and the professional component of the balanced studies that Elizabethtown seeks to foster. Students may choose chemistry as part of their Core Program requirements, as an elective, as a minor area of study, or

as a major area of study leading to a career which requires detailed knowledge of chemistry.

Students majoring in chemistry typically go on to graduate studies in chemistry or biochemistry, to hospital or industrial laboratories, to the study of medicine, to secondary education, or to business positions in the chemical industry.

The Department of Chemistry offers two majors: one in biochemistry and the other in chemistry with a choice of concentrations, and minors in chemistry and biochemistry.

The bachelor of Science in biochemistry prepares students for medical school or other health professions schools, graduate study in biochemistry and related fields, or employment that requires baccalaureate education. Premedical and other health professions programs, including the Primary Care Pre-Admissions Program of the Pennsylvania State University College of Medicine, are discussed on p. 70.

The bachelor of Science in Chemistry offers five concentrations: the American Chemical Society approved professional chemistry curriculum, the medical technology curriculum, and the secondary education certification, chemistry management, and chemical physics curricula. The American Chemical Society option prepares the student for graduate school or for a career in industrial or government laboratories. The secondary education curriculum prepares students for high school teaching. The chemistry management option is preparation for sales or management positions in chemical and related industries, and chemical physics is a foundation for work at the interface between chemistry and physics.

There are two options within the *medical technology curriculum* offered in cooperation with hospital programs accredited by the American Medical Association's Committee on Allied Health and Accreditation (CAHEA). Most students choose the option requiring three years (96 credits) at Elizabethtown College and a 12-month period of study at a hospital approved by the American Medical Association and Elizabethtown College. The degree is usually awarded in August upon the recommendation of the pathologist or program supervisor of the hospital and the medical technology director of Elizabethtown College. Elizabethtown College is affiliated with Harrisburg Hospital, Polyclinic Hospital (Harrisburg), Monmouth Medical Center (Long Branch, N. J.), York Hospital, Lancaster General Hospital, Abington Hospital and Reading Hospital. The second option requires four years of study at Elizabethtown College followed by a clinical year of experience. The clinical year is not required for a degree from Elizabethtown College when this second option is chosen.

The Medical Technology Registry examination is given in February and August. All requirements for the B.S. degree must be completed prior to taking the Registry examination. Registry results cannot be released until the

degree is granted. It is the student's responsibility to keep the Registration and Records office informed of all personal data changes and the expected date of graduation. A diploma application card should be filed with in the Office of Registration and Records in January of the year of the clinical study.

Minors in chemistry and biochemistry prepare students to apply chemical concepts and practices in their major discipline.

Additional options may be tailored to the student's needs in consultation with the student's advisor and the department chair. Students planning much work in chemistry should consult with a departmental advisor as early as possible to plan the sequence of courses in chemistry, mathematics, physics, and biology, which will be to their greatest advantage. Many upper-level chemistry courses have calculus and physics courses as prerequisites. The sequence in secondary education also requires early planning to ensure proper spacing of education courses.

The biochemistry curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327, 343, 361-2, 461-2, and four credits from among 451, 491, 492, or 496; Biology 111, 112, 324, 324L; 6 additional hours of biology and 3 hours of biology or chemistry; Computer Science 115; Mathematics 122; and Physics 102.

The A.C.S. approved curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 324, 326, 327 or 353, 343, 344, 352, 361-2, 402, 421, 461-2, and four credits from among 451, 491, 492, or 496; Computer Science 115; Mathematics 222; and Physics 102.

The medical technology curriculum requires Chemistry 113, 114, 213, 214, 323, 324, 326, 327, 361-2; Biology 111, 112, 222, and 235, and electives to total a minimum of 16 semester hours; Computer Science 115; Mathematics 101 or 121, 151; and Physics 101. For students attending Elizabethtown for three years, these required courses plus Core Program and electives must total 96 semester hours. The clinical year includes a minimum of 29 additional semester hours. For those attending Elizabethtown for four years, additional requirements are Chemistry 242, 461-2, and four credits from among 451, 491, 492, or 496; Mathematics 122; Physics 102; and two additional courses in biology or chemistry.

The secondary education curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 353, 361-2, and one additional chemistry course; Biology 111, 112; Computer Science 115; Mathematics 222; Physics 102; and Education 205, 230, 305, 415, and 473. The department also participates in the general science certification program. For a detailed listing, see page 70.

The chemistry management curriculum requires Chemistry 113, 114, 213, 214, 242, 323, 343, 326 or 353, 361-2, 461-2, and one additional chemistry course; Computer Science

115; Mathematics 222; Physics 102; Accounting 107; Business Administration 215, 265, 325, 332, 369, 466; and Economics 100, 102.

The chemical physics curriculum requires Chemistry 113, 114, 213, 214, 242, 343, 344, 352, 353, 361-2, 461-2, and at least four credits from 451, 491, 492, or 496; Computer Science 115; Mathematics 222; and Physics 202. Also, a minimum of three courses from the following: Chemistry 402, 421, two credits from 491, 492, or 496; Mathematics 362; or any 300-400 level Physics courses.

A minor in chemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of advanced chemistry as approved by the department faculty.

A minor in biochemistry requires Chemistry 113, 114, 213, 214, and a minimum of four additional semester hours of biochemistry.

101* General Chemistry: Practical Principles

4 credits. **(Natural World)** An introduction to the study of the material world from a phenomenological, measurable, and observable viewpoint. Topics include elements and compounds, weight relationships, states of matter, solutions, descriptive reactivity, reaction energetics, solution equilibria, and organic and biochemical structure and nomenclature. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra.* Fall, spring semesters. Profs. Reeder, Schaeffer.

105* General Chemistry: Theoretical Principles

4 credits. **(Natural World)** An introduction to the study of the material world from a conceptual, model building viewpoint. Topics include elements and compounds, atomic composition and electronic structure, bonding and molecular structure, physical properties, thermodynamics, and reaction kinetics. Hours: lecture 3, laboratory 3. *Prerequisites: high school algebra.* Spring semester. Prof. Schaeffer.

107* Chemistry of Life: Energy

4 credits. **(Natural World)** This course will begin with the posing of a question of general interest involving the expenditure of energy in muscle contraction. Students will examine how scientists answer that question, including how energy is produced and used in muscle tissue, the chemistry of this process and some of its limits. The chemistry and biochemistry of carbohydrates, enzymes, vitamins, hemoglobin, and gene replication and translation into protein are discussed. *Note: Students who have credit for Chemistry 207 may not enroll in this course.* Hours: lecture 3, laboratory 3. *Prerequisites: high school chemistry and algebra or equivalent.* Fall semester. Prof. Hagan.

113* Organic Chemistry I

4 credits. **(Natural World)** The first course for those students who plan to take more than one year of chemistry. Topics include formulas, stoichiometry, bonding, geometry, equilibrium, reactivity, kinetics, and instrumentation applied to carbon compounds. The importance of organic compounds across disciplines and in everyday life will be emphasized. Hours: lecture 2, discussion 1, laboratory 3. *Prerequisites: high school chemistry and algebra or equivalent.* Fall semester. Prof. Proctor.

114 Organic Chemistry II

4 credits. A continuation of Chemistry 113, emphasizing synthesis and reaction mechanisms. Hours: lecture 3, laboratory 3. *Prerequisite: Chemistry 113.* Spring semester. Prof. Proctor.

116 Selected Topics in Organic Chemistry

1 credit. Selected exercises for students desiring additional experience in organic chemistry laboratory. Hours: laboratory 3. *Prerequisite or corequisite: Chemistry 114; permission of instructor.* Spring semester. Prof. Proctor.

207* Chemistry of Life: The Biochemistry of Cancer and AIDS
4 credit. (Natural World) Some aspects of these two groups of diseases including the biochemistry of normal cells and modification by viruses and/or mutations are examined. Topics include the biochemistry of genes and other forms of DNA and RNA leading to proteins, the nature of enzymes, and other biomolecules. Special emphasis will be placed on carcinogen and anti-tumor agent effects. *Note: Students who have credit for Chemistry 107 may not enroll in this course.* Hours: lecture 3, laboratory 3. *Prerequisites:* high school chemistry and algebra and one 100-level Mathematical Analysis course. Spring semester. Prof. Hagan.

213 Analytical Chemistry I

4 credits. Quantitative analysis emphasizing classical inorganic, gravimetric, and volumetric methods. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 114 or equivalent. Fall semester. Prof. Hedrick.

214 Analytical Chemistry II

4 credits. A continuation of Chemistry 213, with added emphasis on instrumental methods and computer applications. Hours: lecture 2, laboratory 6. *Prerequisite:* Chemistry 213 or equivalent. Spring semester. Prof. Hedrick.

242 Physical Inorganic Chemistry

3 credits. Thermodynamic stability and bonding in ionic and covalent inorganic substances. Inorganic reactivity in acid-base and oxidation-reduction systems. Some descriptive chemistry of main group and transition metal elements. *Prerequisites or corequisites:* Chemistry 214, Mathematics 122, Physics 102. Spring semester. Prof. Reeder.

323 Biochemistry I

3 credits. The chemistry of living matter, treating the structures, metabolism, and functions of proteins, lipids, carbohydrates, and nucleic acids. *Prerequisites:* Chemistry 213 and Biology 112 or equivalent. Fall semester. Prof. Hagan.

324 Biochemistry II

3 credits. A continuation of Chemistry 323. *Prerequisite:* Chemistry 323. Spring semester. Prof. Hagan.

326 Techniques of Biochemistry I

1 credit. Techniques used in experimental investigations in biochemistry. Hours: laboratory 4. *Corequisite:* Chemistry 323. Fall semester. Prof. Hagan.

327 Techniques of Biochemistry II

1 credit. A continuation of Chemistry 326. Hours: Laboratory 4. *Prerequisite:* Chemistry 326; *corequisite:* Chemistry 324. Spring semester. Prof. Hagan.

343 Atomic Structure (Physics 221)

3 credits. Twentieth-century developments in the structure of the atom. Topics include X-rays, radioactivity, atomic spectra, blackbody radiation, introduction to quantum theory emphasizing the extranuclear structure of the atom, elementary particles, nuclear structure, and transformations. This course is the same as Physics 221. *Prerequisite:* Physics 102, Mathematics 122. Fall semester. Prof. Ranck.

344 Molecular Structure and Mechanics

3 credits. An extension of quantum theory to molecules and condensed states of matter. Includes principles of optical and magnetic resonance spectroscopy for molecular structure determination and statistical mechanics as a basis for chemical equilibrium and reactivity. *Prerequisite:* Chemistry 343. Spring semester. Prof. Ranck.

352 Advanced Chemistry Laboratory II

3 credits. Problems and experiments in the determination of molecular structure. Hours: lecture 1, laboratory 7. *Corequisite:* Chemistry 344. Spring semester. Prof. Ranck.

353 Advanced Chemistry Laboratory I (Physics 353)

4 credits. Experimentation, data acquisition, data analysis, and technical presentations appropriate for the physical and chemical sciences. Emphasis on statistics of physical/chemical experimental data and computer methods of analysis, including electronic laboratory notebooks and computer networks. Hours: lecture 2, laboratory 6. *Prerequisites:*

Computer Science 115, Mathematics 121, and Physics 102. Fall semester. Prof. Ranck.

361, 362 Chemistry Seminar I, II

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 362. Hours: seminar 1 (Fall), seminar 1 (Spring). Prof. Schaeffer.

371-379 Special Topics in Chemistry

Variable credit. Study of an advanced topic, experimental or theoretical, of interest to the student. *Prerequisites:* permission of instructor and department chair. Staff.

402 Advanced Inorganic Chemistry

3 credits. A study of the elements and their compounds based upon atomic and molecular structure. *Prerequisite:* Chemistry 344. Spring semester. Prof. Schaeffer.

421 Advanced Organic Chemistry

3 credits. A study of organic reactions based on experimental and advanced theoretical studies. *Prerequisite:* Chemistry 344. Fall semester. Prof. Proctor.

451 Advanced Chemistry Laboratory III

4 credits. Designed primarily to acquaint the student with synthetic methods in inorganic chemistry as well as product purification and identification. Hours: lecture 3, laboratory 4. *Prerequisite:* Chemistry 242. Fall semester. Prof. Schaeffer.

461, 462 Chemistry Seminar III, IV

1 credit. A two-semester sequence in which a student must present a minimum of one seminar and regularly attend those presented by other students. The student must enroll in both courses to receive credit which is given upon completion of 462. Hours: seminar 1 (Fall); seminar 1 (Spring). Prof. Schaeffer.

460-469 Clinical Courses in Medical Technology

28 credits (minimum). Instruction during the clinical year includes the following courses.

Clinical Microbiology—Identification and clinical pathology of bacteria, fungi, viruses and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control. *Clinical Chemistry*—Enzymology, endocrinology, biochemistry of lipids, carbohydrates and proteins, metabolism of nitrogenous end products, physiology and metabolism of fluids and electrolytes, and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation and quality control.

Clinical Hematology/Coagulation—The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

Clinical Immunohematology—Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

Clinical Immunology/Serology—Immune response, immunoglobulins, autoimmunity and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

Clinical Seminar—Other courses which are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

Prerequisite: admission to the medical technology school of the cooperating hospital.

491-492 Research in Chemistry

Variable credit. An original experiment or theoretical investigation under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite:* permission of instructor. Staff.

496 Independent Problems in Chemistry

Variable credit. An independent experimental or theoretical investiga-

tion under the close supervision of a faculty member. Experimental design and a written report are required. *Prerequisite: permission of instructor.* Staff.

Education 305 Practicum in Secondary Education: Science
4 credits. Teaching science in secondary schools. *Prerequisite: Education 230.*

Department of Communications

Professor Moore (*Chair*)
Associate Professors Smith, Wennberg
Instructor Dye, Thomson

Bachelor of Arts

The Department offers a comprehensive preparation in the field of communications firmly grounded in a well-rounded liberal arts education. In addition to developing skills in written, spoken, and visual communications, students learn the theory, design, management, and production of communication. Courses in oral communication, graphics, audio and video production, among others, permit upperclass majors to advance into areas of concentration such as Corporate Media, Public Relations, and Mass Communication.

Department facilities are located in the Steinman Center for Communications and Art. This center contains modern equipment in audio and video studios, satellite communications and in photography, graphics, and multi-image laboratories. The student radio station, WVEC-FM, and the 24-hour local access cable television production facility, ECTV-Channel 40, are housed in the center.

The curriculum is complemented by a number of departmental student organizations: WVEC-FM Radio, Photography Club, Forensics Club, Society for Collegiate Journalists, Honorary Journalism Society, International Association of Business Communicators (Elizabethtown College chapter), ECTV, and Delta Sigma Rho-Tau Kappa Alpha (Honorary Forensics Fraternity). In addition, *The Etownian* (student newspaper) and the *Conestogan* (yearbook), as nondepartmental student activities, provide excellent journalism experiences for majors. These organizations sponsor speakers, workshops, contests, and trips to enhance campus life and especially to make the student's classroom experience more meaningful.

The curriculum, complemented by many cocurricular activities, prepares majors for careers in corporate and institutional communications, public relations, broadcasting, newspaper and magazine writing and reporting, advertising, sales, law, the ministry, and many more fields.

The 44 credits required for a Bachelor of Arts degree with a *communications major* include Communications 109, 115, 125, 205 (repeated for four semesters), 210, 215, 225, 235, 248, 485; Computer Science 120 (Introduction to

Computer Processing for the Macintosh), and 12 credits in a concentration. All majors are strongly encouraged to complete a minor area of study chosen in consultation with their advisor. Graduates are prepared as communications generalists. However, required additional courses in an area of concentration permit students to focus their general preparation into a specific area of career interest. The minor allows for complementary preparation in another discipline. Prior to preregistration for the junior year, the student must elect a communications concentration which requires 12 credits. The Department offers *three concentrations*.

The Corporate Media concentration prepares a student as a designer, producer, and a manager of a variety of internal/external media programs and facilities for business, industry, and other institutions. The student is required to complete Communications 333, 348, and two electives to be chosen from Communications 336, 408, and 424.

The concentration in Public Relations permits a graduate to apply learning in areas of human relations, advertising, interpersonal communications, and corporate communications. Requirements are Communications 311, 351, 412, and one elective to be chosen from the following: Communications 314, 316, 333, and 348.

The Mass Communication concentration, in addition to basic preparation in communications, develops competencies in areas of broadcast and print journalism. Required are Communications 311, 314 or 316, and two electives to be chosen from the following: Communications 314, 316, 321, 336, 348, 422, and 424.

A minor in communications is offered to students majoring in other departments. The minor permits a student to reach a level of competency in written, spoken, and visual communications to complement their primary area of preparation. The 25 credits required for a minor in communications include Communications 109, 115, 125, 205 (repeated for two semesters), 225; Computer Science 120 (Introduction to Computer Processing for the Macintosh); and 9 credits of approved departmental electives at or above the 200 level.

No more than 57 credits in Communications may be counted toward graduation.

Admission Requirements for Communications Majors and Minors

All students must have a 2.0 grade point average to declare the major or minor and enroll in any courses above the 100 level.

Internships and Practica

Out-of-classroom, on-the-job field experiences are encouraged of all students. A valuable experience linking the academic world and the work world, an internship or practicum can enable an advanced student to apply, in a

practical way, understandings and abilities in a career-related position.

Practica may be elected at any time and are available for no more than three semester credits with on or off campus sponsors. Internships are available only to seniors and must be taken only for twelve semester credits (requiring the internship to be the equivalent of a full-time position for a complete semester). Additionally, the internship option requires an overall 2.70 grade point average and a 3.0 grade point average in the major.

Practica are repeatable to a maximum of three credits and may count only as general elective credit. Internship credits also count as general elective credits.

The Department's "Guide to the Preparation of Internships" serves as an outline of procedures and requirements for an internship. Students are permitted to seek their own positions for either option or to select one from more than 100 opportunities already negotiated with regional communications organizations.

The department has also become affiliated with other major institutions and organizations to assist in providing internship experiences in major urban areas. These affiliations include: the Washington Center for Politics and Journalism, the American University Washington Semester Program, the Boston University Washington Internship Program (through the Political Science department) the Washington Center for Internships and Academic Seminars, and the Intern Placement Service (in New York City and throughout New Jersey).

Students electing these options are encouraged to consider the purchase of temporary professional liability/casualty insurance. The College assumes no liability for the student during the course of the person's performance of duties for an off-campus sponsoring organization.

Related Expenses

Additional expenses for the communications student normally include production materials for audio, video, and graphics courses. These expenses are part of the following courses: Communications 125, 215, 225, 235, 321, 336, 348, and incidentals in other courses.

It is strongly recommended that communications majors obtain a Macintosh computer which is used in several courses. Educational discounts are available if the computer is purchased through the College.

105* Fundamentals of Speech

3 credits. (**Power of Language**) An examination of the structures, functions, political, social, and economic impacts of the mass media in the U.S. A goal is to help students become more critical and analytical consumers of the mass media. *Available only to students with English 150 placement level, if course is to be used for Power of Language requirement.* Prof. Dye.

109 Communications Theory

3 credits. Students explore and examine the processes of human

communication as related to various aspects of human experience. Focus is on several levels, individual, interpersonal, and mass, examining such aspects as speech production, sender/receiver relationships, listening, nonverbal communication and the use of symbols. Students explore mass media from a human communication perspective. Prof. Ellis.

115* Media and Society

3 credits. (**The Social World**) An examination of the structures, functions, political, social, and economic impacts of mass media in the U.S. A goal is to help make students critical and analytical consumers of the mass media. Profs. Moore, Severeid.

125 Introduction to Media Production

3 credits. The course provides the design, theory and development of production skills and techniques for a variety of audio-visual materials, photography, and print materials. Students are required to participate in labs dealing with the operation and utilization of production equipment and the actual production of materials, including a multi-image presentation. Prof. Wennberg.

205 A—D Applied Communications

.5 credit. Four semesters of participation in approved cocurricular activities is required of all majors. All participants must meet the standards of the activity in order to count toward meeting the requirement. The four semesters of participation must be in different, approved activities. These include: a. WWEC-FM, b. Forensics, c. *Etownian* and *Conestogan*, d. ECTV. Communication minors are required to have two semesters of participation in any two activities. A communications major or minor may enroll in no more than one 205 course per semester. All 205 requirements must be completed by the end of the junior year. *Graded Pass/Fail.* Staff.

210 The Oral Communicator

3 credits. Students become proficient at translating the written word into an oral performance. Exercises and projects develop competence in a variety of areas appropriate to any of the communications concentrations that may be chosen by a major. *Prerequisites: Communications 105 or 109.* Profs. Dye, Severeid, Smith.

215 Layout and Graphics

3 credits. The principles of design, typography, and assorted methods of production to provide a foundation in the preparation of posters, newsletters, magazines, special interest publications, and slide graphics. Elements of desktop publishing are included. Students are required to purchase production materials for the course. Access to a Macintosh computer is highly recommended. *Prerequisites: Communications 125 and Computer Science 120 (for the Macintosh).* Prof. Wennberg.

225 Audio: Theory and Practice

3 credits. The technical and aesthetic fundamentals of audio field and studio production. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic audio projects. A general overview of the history of radio is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 125.* Prof. Smith.

235 Video: Theory and Practice

3 credits. The technical and aesthetic fundamentals of video field and studio production and postproduction. Through the development of basic technical and critical skills, the student will become knowledgeable in writing and producing basic video projects. A general overview of the history of broadcast television is included. Students are required to purchase production materials for the course. *Prerequisite: Communications 225.* Prof. Thomson.

245* Communication Analysis and Culture

3 credits. (**Cultural Heritage**) A critical exploration of rhetorical theories from the ancient period to the modern which focus primarily on the spoken word. The validity and impact of these communication theories will be analyzed within the bounds of current thought and in context of the theory's contemporary beliefs. Spring Semester. Prof. Dye.

248 Communication Law and Ethics

3 credits. An examination of the law of the field of communications as well as its history and effects. Current ethical issues are explored

through case studies. *Prerequisite: Communications 115 or permission of instructor.* Prof. Sloane.

301 Interpersonal Communication

3 credits. The theory and application of interpersonal relationships on the personal, education, and organizational levels. Spring semester, odd numbered years. Prof. Dye.

304 Persuasion

3 credits. The theory and techniques of persuasion from the perspective of the persuader and the audience. Topics include the ethics, social responsibility, and motivation of persuasion; the techniques of nonverbal communication and mass appeals. Spring semester, even numbered years. Prof. Dye.

311 Reporting and Newswriting for the Media

3 credits. An introductory study of news media and values, with emphasis on effective reporting and clear writing against deadlines. Accuracy, fairness, and logic in preparing stories under conditions similar to those encountered by professional journalists is stressed. *Prerequisite: Communications 115 or permission of the instructor.* Staff.

314 Feature Writing for the Media

3 credits. Skills needed to write free-lance articles or presentations on any topic to a wide range of media are developed. Among types of writing covered are human interest, personality sketch, humor, how-to, background and informational pieces. Story titles, openings, closings, structure, use of anecdotes, and statistics are examined. *Prerequisites: For majors: Communications 311 or permission of the instructor. For Professional Writing students: two Professional Writing courses and permission of the instructor.* Spring semester, odd numbered years. Staff.

316 Broadcast News and Copywriting

3 credits. The styles and techniques of writing for the broadcast media, with emphasis on conceptualizing, writing, editing copy, continuity, and news for radio and television. *Prerequisite: Communications 225, 235, 311, or permission of instructor.* Spring semester. Prof. Thomson.

321 Advanced Audio Production

3 credits. An advanced examination of writing and producing audio materials for radio broadcasting. In-depth analysis of the medium includes commercials, news, documentaries, and special programs. Students are required to purchase production materials. *Prerequisites: Communications 225 and 235.* Fall semester, even numbered years. Prof. Smith.

333 Organizational Communication

3 credits. Through theory, application, and practice, this course explores aspects of organizational communication in order to prepare students for the challenges of organized activity at work, in the community, and in the family. Fall semester. Prof. Dye.

336 Advanced Video Production

3 credits. Development of the ability to produce programs, commercials, newscasts, and other broadcast and nonbroadcast productions. Students produce a number of class projects, applying video techniques to the fields of broadcast television, cable, corporate/educational/medical productions, production houses, and other nonbroadcast uses. Students are required to purchase various production materials. *Prerequisites: Communications 235, 205-ECTV (may be a corequisite).* Spring semester. Prof. Thomson.

348 Advanced Media Production

3 credits. Advanced-level instruction in the conceptualization, design, development, and management of communications media in the areas of photography and multi-image. Students participate in laboratory experiences dealing with the production of photography and multi-image at the advanced level. The basic and advanced theories and applications of training, color photography, and computer graphics are explored to aid the student in the creative production of communications materials. Students are required to purchase production materials for the course. *Prerequisites: Communications 125, 225, and 235, or permission of instructor.* Fall semester. Prof. Wennberg.

351 Public Relations

3 credits. A study of the theory and practice of public relations, its role in administration, its role in society, and its potential as a career. *Prerequisite: Communications 311 or permission of instructor.* Fall semester. Staff.

371-379 Special Topics

Variable credit. Periodic offerings of the Department or directed study in topics of special interest to advanced majors. *Note: These courses generally count as elective credit in all concentrations.* Staff.

408 A Systems Approach to Organizational Training

3 credits. Students study the theory and application of instructional systems design techniques to corporate and organizational training problems. Applications of interactive computer techniques will be used to solve training problems. Spring semester. Prof. Wennberg.

411 Telecommunications

3 credits. Recent technical developments in the field of communication and their potential sociocultural impact and resulting problems/advances related to utilization of the new systems. Periodic offering. Prof. Moore.

412 Advanced Public Relations

3 credits. The opportunity for a student to build upon knowledge, skills, and expertise in public relations by applying them to the study of actual public relations cases. The analysis and evaluation of actual public relations practice leads the student to a better knowledge of public relations principles, application, and management in the profession. Case studies include organizations in business and industry, associations and agencies, government, and education. *Prerequisite: Communications 351.* Spring semester. Staff.

422 Media Management

3 credits. The structure and organization of media institutions, including broadcasting and print facilities. Management principles and perspectives are discussed in their application to media departments and personnel. *Prerequisites: Communications 225, 235, 248.* Fall semester, odd numbered years. Prof. Severeid.

424 Script and Screenwriting

3 credits. The course emphasis will be placed on identifying the tools used in successful, creative writing, and then putting them into practice. The student will become familiar with, through study and practical application, the various visual/audio formats used in dramatic radio, television, and film scripting and writing. Spring semester, odd numbered years. Prof. Severeid.

471, 472 Practicum and Internship

Variable credit. Supervised application of previously studied theory by professionals in the field of the student's concentration: Corporate Media, Public Relations, Mass Communication. *Practicum—on or off-campus sponsor for free elective credit only, pass/fail, repeatable to a maximum of three credits, majors and minors.*

474 Internship

12 credits. *Prerequisites: senior standing, majors only, 2.70 cumulative grade point average with a 3.00 grade point average in the major. Must be taken for a full semester off-campus for free elective credit only.* Prof. Moore.

480-489 Independent Study

Variable credit. A specially-designed course, unique to each student, which allows the person the opportunity to pursue scholarly and practical work in the area of major interest under the guidance of members of the communications faculty. Specific goals and objectives permit the student to complete special projects, literature reviews, and research papers. *Prerequisites: at least junior standing, scholarship requirement, permission of instructor, and permission of Independent Study Committee.* Staff.

485 Communications Seminar

3 credits. A final course required of all majors, integrating the theory and skills developed in preceding courses. As an individualized learning experience, the course provides opportunities for research, experimentation, project development, analysis, and practice of methods in each major's area of concentration. *Prerequisite: senior standing.* Profs. Moore, Wennberg.

Department of Computer Science

Professor C. Kreider

Associate Professors Leap, Tulley (*Chair*)

Assistant Professor Bina

Visiting Professor French

Lecturer Evans

Bachelor of Science

The advent of high-speed machines with enormous capacity for the gathering, processing, storage, retrieval, and communication of information affects nearly every aspect of our professions and our daily lives. Courses in computer science encourage the exploration and understanding of this social and technological phenomenon. Survey courses are offered for those who wish to understand in broad social contexts the nature of the computer and its effect on our lives and on society. Programming and language courses are offered for those who need to become skillful users of the computer. Advanced study in theory, hardware, software, and applications is provided for the computer science major and for those who want to use the computer effectively and knowledgeably in another discipline. Advanced courses relate closely to the curricula in business, the natural and social sciences, engineering, and mathematics. Students are encouraged to develop simultaneous strengths in computing and in a discipline in which the computer is used as a tool.

The department offers *three majors*—one in *computer science*, one in *computer science/business information systems*, and another in *computer engineering*, which is offered in conjunction with the Department of Physics. All three majors provide a strong curriculum from which a professional career may be launched or a graduate program pursued.

The department also offers a *minor* that enables majors in other disciplines to obtain recognition for course work in computer science. Department faculty help tailor the elective course selections to meet individual needs of students pursuing a minor.

The College's main computing facility is housed in Nicarry Hall, and consists of two Digital Equipment Corporation computer systems. The VAX 4000 cluster is used primarily for administrative purposes. The VAX 3100 is dedicated to academic use.

The College also has available for student use a variety of micro and personal computers. These include Apple, IBM, and Epson computers. Interconnection between the computers is provided.

The computer science department maintains an Intel 80486/33 based multiuser timesharing computer system running the UNIX operating system. This system is housed in the department's computing laboratory along with a number of other 80386 and 80286 based PC's. All

departmental computers are connected to a local area network (LAN) based on ethernet technology. The department also maintains a computer interfacing and electronics design laboratory.

The department strongly recommends that students purchase their own MS DOS-based personal computer. To facilitate this, the College supports a computer purchase program through which students may purchase IBM PC's at excellent prices. Students can also build their own personal computer as part of several computer science courses.

Major software systems available on the computers include most major computer languages (Actor, Ada, BASIC, Pascal, C, COBOL, FORTRAN, Modula and assembly language); many specialized languages and packages (SPSS, Minitab, GPSS, Dbase III+, Lotus 1-2-3, and WordPerfect); and relational data base management systems.

All computer science majors and students enrolled in courses requiring use of the VAX computer are assigned individual computer accounts and are given ample on-line storage space as well as access to personal computers.

All computer science and computer science/business information systems majors are required to take a minimum of 39 credits of computer science courses.

The computer science major is required to take Computer Science 121, 122, 221, 222, 321, 322, 332, 341, 421 or 422, and 490, plus nine credits of computer science electives; Mathematics 121, 122, and 201; and a minor in another discipline.

The computer science/business information systems major is required to take Computer Science 121, 122, 135, 221, 222, 332, 335, 341, 409, 490, and nine credits of computer science electives; Mathematics 117, 151; Accounting 107, 108; Business Administration 215, 265, 325; and Economics 100, 102.

The three Computer Science electives required of the computer science major and the computer science/business information systems major may include either CS 120 or CS 130, but not both.

The computer engineering major requirements are specified under the Department of Physics.

The requirements for a computer science minor are Computer Science 121, 122, 221, 222, and three additional computer science courses approved by the computer science faculty.

115 Introduction to Scientific Computing

1 or 3 credits. An introduction to the use of computers for scientific applications. Topics include algorithmic problem-solving techniques, syntax of an appropriate programming language, data representation, file handling, and the use of subprograms. (*Students who have passed Computer Science 121 receive one credit for this course. This course does not count towards a computer science major or minor*). Prof. Reeder.

120 Introduction to Microcomputer Applications

3 credits. An overview of computer concepts, uses, and issues. The personal computer operating system and several software packages (database, desktop publishing, spreadsheet, and word processing) are a major component. Staff.

121* Computer Science I

1 or 3 credits. **(Mathematical Analysis)** The fundamental concepts of computer organization, machine level representation of data, algorithmic development and structured programming are presented with an emphasis on the syntactic and execution characteristics of a structured programming language (currently Pascal) including data types; arithmetic operators and assignment; input/output, selection and iteration structures; elementary data structures; and procedural abstraction. *Prerequisites: high school algebra and/or trigonometry.* (Students who have successfully completed Computer Science 115 will receive one credit for this course.) Staff.

122 Computer Science II

3 credits. A continuation of 121 with emphasis on algorithmic analysis, recursion, internal sort and search methods, string processing, fixed and variant record structures, and file handling using a second programming language (currently C) and the UNIX operating system. *Prerequisite: Computer Science 121.* Staff.

130 Microcomputer Architecture

3 credits. The operation of the microcomputer, the physical characteristics of its architecture, and the implementation of software are discussed. The course explores the UNIX, Macintosh, and IBM operating environments. Topics covered include computer ethics, hardware components such as memory registers, central processor types, controllers, peripherals such as disk drives and tape drives, ASCII code implementation, input/output architecture and devices, memory management, networking, and multimedia. Staff.

135 Introduction to Business Computing

3 credits. The application of the computer in a business environment. Topics include the structure of data, sequential file processing, table organization and processing, design and debugging techniques using COBOL. *Prerequisite: Computer Science 121.* Fall semester. Staff.

221 Algorithms and Data Structures

3 credits. The design of algorithms for handling abstract data types including stacks, queues, linked lists and trees is coupled with an introduction to complexity analysis, storage allocation and its management. *Prerequisite: Computer Science 122.* Fall semester. Staff.

222 Assembly Language Programming

3 credits. Introduction to programming at the machine and assembly level, including the relation to computer organization and the operating system interface. Topics include absolute and relocatable coding, program segmentation and code sharing, program linkage and loading, assembler operation, and macros. *Prerequisite: Computer Science 122.* Spring semester. Staff.

321 Discrete Structures (Mathematics 231)

3 credits. Topics in discrete mathematics as they apply to computer science, including sets, relations, graphs and trees, Boolean algebras, groups and fields. Fall semester.

322 Formal Languages

3 credits. A discussion of grammar classifications as a formal description for programming language syntax, finite state machines as acceptors of regular expressions, and the equivalence of push-down automata and context-free grammars and their use in parsing programming languages. *Prerequisites: Computer Science 221, 321.* Spring semester. Prof. Tulley.

332 Computer Organization and Architecture

3 credits. Introduction to Boolean algebra, design of combinational and sequential circuits, and their use in von Neumann computer architecture. Basic parts of computer systems including memory, control and input-output systems are studied. The student is expected to design a simple micro-programmed computer. *Prerequisite: Computer Science 222.* Fall semester. Prof. Bina.

333 Computer Systems Interfacing (Physics 242)

3 credits. Digital logic and integrated circuits to implement logic; architecture and machine language programming of mini-computers and microprocessors; design, testing, and construction of instrument-to-computer and computer-to-instrument interfaces; design and testing of supporting software. *Prerequisite: Computer Science 122.* Spring semester, odd numbered years. Prof. Leap.

335 Programming Business Applications

3 credits. An advanced study of the COBOL language and a study of the concepts and techniques of sorting and searching, report generation, file processing, and structuring data in files including random and ISAM files. Projects relating to programming in business will be assigned. *Prerequisite: Computer Science 135.* Spring semester. Prof. Leap.

340 Information Systems

3 credits. A study of information systems from the user's point of view to give the potential manager an appreciation for the information requirements of an organization as well as the manager's role in the design of such systems. Topics include information and systems theory; the relationship between management, systems, software applications, and information; and an investigation of information systems of the various functional areas within the organization. *Prerequisites: Computer Science 120 or 121; Business Administration 215, 265.* Spring semester. Prof. C. Kreider.

341 Systems Analysis and Design

3 credits. Analysis and design of computer-based and manual systems, including a study of information requirements, design approaches, processing methods, and data management systems. *Prerequisite: Computer Science 122 or 135.* Fall semester, odd numbered years. Prof. R. Evans.

344 Simulation

3 credits. Fundamentals of modeling, stochastic processes, statistical measures of validity, and queuing theory. Applications are programmed in higher-level languages as well as a specialized simulation language. *Prerequisites: Computer Science 221; Mathematics 151; or permission of instructor.* Prof. Tulley.

361 Computer Graphics

3 credits. Overview of the principles of computer graphics including the basis of raster and vector display devices; representation of lines, and curves, two- and three-dimensional scaling; hidden lines and surfaces; and animation techniques involving interactive graphics and the user interface. *Prerequisites: Computer Science 221 and Mathematics 201.* Prof. Bina.

362 Comparison of Programming Languages

3 credits. Comparative study of programming language concepts including data objects and data types, scope, procedures, abstraction mechanisms, sequence control, exception handling and concurrency, providing a framework for understanding language design. Intended to provide the necessary tools for critically evaluating existing and future languages and language constructs. *Prerequisite: Computer Science 221.* Prof. Tulley.

371-379 Special Topics

3 credits. A course designed to allow students to examine topics and problems of current relevance in computer science. *Prerequisite: permission of instructor.* Staff.

409 Data Base and Information Systems

3 credits. A study of database design and management techniques. Topics include data models (E-R, relational); query languages; data dictionary; implementation of a relational database kernel; file security; and various database implementations (hierarchical, network, relational). *Prerequisites: Computer Science 221 and 341 or permission of instructor.* Spring semester, even numbered years. Prof. R. Evans.

421 System Programming I

3 credits. Design and construction of system software such as text editors, compilers, interpreters, and assemblers. Topics include command and statement parsing techniques, symbol tables, code generation, code optimization. A project involving design and construc-

tion of a working systems program will be assigned. *Prerequisites:* *Computer Science 222, and either Computer Science 322 or permission of the instructor.* Fall semester, odd numbered years. Prof. Leap.

422 System Programming II

3 credits. An examination of the principles and theories behind the design of operating systems as well as their practical implementation. Topics include executives and monitors, task handlers, scheduling algorithms, file handlers, device drivers, and interrupt handlers, theories of resource allocation and sharing, multiprocessing and interprocess communication. *Prerequisites:* *Computer Science 332.* Spring semester, even numbered years. Prof. Bina.

471 Internship in Computer Science

Variable credit. Work experience designed to supplement course work. By working for business, school, or government, the student gains valuable knowledge unavailable from textbooks. *Prerequisite:* *approval of the computer science faculty.* Prof. Evans.

480-489 Independent Study

Variable credit. Designed to allow the student to do independent study and research on a problem or topic in the field of computer science. *Prerequisite:* *approval of the computer science faculty and Provost.* Staff.

490-491 Readings and Projects in Computer Science

3 credits. A directed project or study requiring faculty acceptance of a proposal with a final report and defense of work. *Prerequisites:* *senior status or permission of instructor.* Spring semester. Staff.

Earth Science

See *Department of Physics*, page 57.

Department of Education

Professor Rice

Associate Professors Bartoli, Boothby, Fox

Assistant Professors Blue (*Chair*), Toro

Bachelor of Science

The department offers major programs in Early Childhood (N-3) and Elementary Education (K-6) which combine a strong liberal arts education with the development of high professional competence. Supported by the Core Program, the student's minor, and elective coursework, these major programs bring together in a creative way the student, the school, and the subject to be taught. Further, the department stresses the importance of supervised field experiences which complement on-campus courses in education. A dual major in Early Childhood and Elementary Education is also available.

Bachelor of Arts or Bachelor of Science

Programs in Secondary Education are available in selected academic areas (English, Mathematics, Biology, Chemistry, Physics, General Science, and Social Studies). Carefully designed work in the academic or interdisciplinary major, the Core Program, and electives, qualifies students

for the degree appropriate to that major. A program in Music Education (K-12) is also available (see the Department of Fine and Performing Arts).

Certification

The department and the College act as agents of the Commonwealth of Pennsylvania in the teacher certification process for those meeting the standards.

General Requirements of the Programs

Admission to the Programs

1. Make written application to the Department of Education after:
 - a) Completion of a minimum of 30 credit hours with a cumulative grade point average of 2.5 or higher
 - b) Completion of Education 205 and 245 (Elementary Education, Early Childhood Education, or dual major in Elementary and Early Childhood Education), Education 205 and 230 (Secondary Education), or Education 205 (Music Education), with a minimum grade of C (2.0) in each.
2. Submit a TB medical clearance
3. Provide a record of Act 34 clearance
4. Declare a college approved minor (Elementary Education, Early Childhood Education, and dual major in Elementary and Early Childhood Education only)
5. Receive approval of the Department of Education and the major department(s)
6. Present a portfolio demonstrating interest and/or experience in professional education (may include: above items, letters of recommendation, descriptions of experience, written essay, etc.)

Progress in the Programs

1. Receive no grade lower than C- in any course required in the program
2. Receive passing scores on the General Knowledge and Communication Skills tests of the Core Battery of the NTE
3. Maintain a portfolio demonstrating interest and experience in professional education
4. If a cumulative grade point average of 2.5 is not maintained, students are not permitted to enroll for additional Education courses until the cumulative grade point average is 2.5 or higher.

Note: Students are evaluated at the conclusion of each semester and may be advised to withdraw at any time the department determines such action to be appropriate.

Exit from the Programs

1. For the major only (no certification):
 - a) Complete all requirements of the major, except the professional internship, with a cumulative grade point average of 2.0 or higher
 - b) Complete a College approved minor (Elementary Education, Early Childhood Education, or dual major in Elementary Education and Early Childhood Education only)
 - c) Complete an alternative internship experience of at

least 6 credits, approved by the Department of Education

2. For the major and certification:

- a) Complete all requirements of the program with a grade point average of 2.5 or higher
- b) Earn a grade of P in the professional internship
- c) Complete a College approved minor (Elementary Education, Early Childhood Education, or dual major in Elementary Education and Early Childhood Education only)
- d) Receive passing scores on the Professional Knowledge test of the Core Battery and on the Specialty Area test of the NTE
- e) Receive approval of the Department of Education and the major department(s)
- f) Present a portfolio summarizing one's activities and experiences in professional education (may include: evaluations, sample lessons or units, resume, references, videotape(s), etc.)
- g) Show evidence of a valid TB and Act 34 clearance
- h) Complete application for certification

Special Requirements of the Programs

Students in the *Elementary Education Program* must complete Education 205, 245, 250, 265, 325, 335, 345, 355, 365, 385, and 472; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 471; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Dual Elementary and Early Childhood Education Program* must complete Education 205, 245, 250, 265, 315, 320, 325, 335, 345, 355, 365, 385, and 474; complete studies in American History, Geography, Economics, Life Science, and Mathematics (maximum of 16 credits); and complete a College approved minor.

Students in the *Secondary Education Program* must complete an academic or interdisciplinary major as outlined by an area which supports a certification program; complete Education 205, 230, 305, 415, and 473; and satisfactorily complete all other program requirements.

205 Foundations of Education

3 credits. A study of the historical, philosophical, sociological, and political foundations of education. Emphasis is on critical understanding of educational thought and practice in order to identify, interpret, and search for resolution of educational controversies and problems.

230 Analysis of Instruction

4 credits. A study of factors underlying and supporting the teaching and learning process. Topics include: human growth and development, exceptionality, multiculturalism, motivation, teaching and learning

theory, social learning, instructional design and management, and media and technology. Field experience required. *Prerequisite: Education 205.*

245 Teaching and Learning Processes

3 credits. A study of factors underlying teaching and learning processes, including human growth and development, exceptionality, multiculturalism, motivation, teaching and learning theory, and context-specific analysis. Requires field experience.

250 Foundations of Literacy

3 credits. A study of emergent literacy and strategies for teaching beginning reading in an integrated language arts curriculum. Includes an introduction to children's literature. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 265.*

265 Instructional Media and Technology

3 credits. A study of instructional media and basic media design stressing planning, producing and applying instructional media. This course includes evaluation and use of commercial software, data bases, desktop publishing, simulations and problem solving for elementary certification candidates. Requires field experience. *Prerequisites: Education 205 and 245. Corequisite: Education 250.*

305 Methods of Secondary Education

4 credits. A study of the instructional methodology of an academic discipline under the guidance of a clinical professor in the academic major. Field experience required. *Prerequisite: Education 230.*

310 History of Science

1 credit. Selected readings from texts on the history of science. *Prerequisite: Must be in the General Science Secondary Education Certification Program and have permission of the instructor.*

315 Early Childhood Education

3 credits. A study of programs for young children with regard to theoretical base, curricular goals, teacher role, physical environment, and program sponsorship. Requires field experience. *Prerequisites: Education 250 and 265.*

320 Special Methods in Early Childhood Education

3 credits. A study of developmentally appropriate procedures and materials for the preschool child, emphasizing the importance of play in Early Childhood programs. Requires field experience. *Prerequisites: Education 250 and 265.*

325 Science and Health in the Elementary School

3 credits. A study of science processes in an elementary school program: the utilization of multiple resources, organization, management, evaluation, instructional strategies, and integration of science and health in the elementary school program. *Prerequisites: Education 250 and 265. Corequisites: Education 335, 345, 355, 365, and 385.*

335 Mathematics in the Elementary School

3 credits. A study of how children develop a background of understanding and skill in mathematics, concentrating on the development of problem solving, reasoning, and communication skills in mathematics, and connecting mathematics and the real world. Additional focus will be on organization for instruction, alternative means of evaluation, teaching special needs and at-risk students. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 345, 355, 365, and 385.*

345 Reading and the Integrated Curriculum

3 credits. A study of the processes of learning to read and think critically about texts across the K-6 curriculum. The approach of the course is literature-based and student centered, and it includes both creating and evaluating an integrated curriculum for strategic meaning-making. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 355, 365, and 385.*

355 Writing and the Integrated Curriculum

3 credits. A study of writing instruction and its integration across the elementary school curriculum. *Prerequisites: Education 250 and 265. Corequisites: Education 325, 335, 345, 365, and 385.*

365 Social Studies for Elementary Education

3 credits. A study of content, teaching strategies, materials, organizing approaches, and curricula for teaching social studies in the elementary school. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, and 385.

371-379 Special Topics in Education

Variable credit. Topics chosen in response to student and faculty interests. *Prerequisite:* permission of instructor.

385 Elementary Education Practicum

1 credit. Supervised field placement. *Prerequisites:* Education 250 and 265. *Corequisites:* Education 325, 335, 345, 355, and 365.

415 Reading in the Content Area

2 credits. A study of the theory and practice of secondary education with an emphasis on developmental reading and reading in the content area. *Prerequisite:* Education 305. *Corequisite:* Education 473.

471 Professional Internship

16 credits. Student teaching for seven weeks in a pre-K setting and for seven weeks on a K-3 setting. *Prerequisites:* Education 315, 320, 325, 335, 345, 355, 365, 385, and cumulative G.P.A. of 2.50 or higher.

472 Professional Internship

16 credits. Student teaching at the K-6 level. *Prerequisites:* Education 325, 335, 345, 355, 365, 385, and cumulative G.P.A. of 2.50 or higher.

473 Professional Internship

14 credits. Student teaching at the 7-12 level. *Prerequisite:* Education 305 and cumulative G.P.A. of 2.50 or higher. *Corequisite:* Education 415.

474 Professional Internship

17 credits. Student teaching for a minimum of ten weeks in a K-6 setting and for six weeks in a pre-K setting. *Prerequisites:* Education 315, 320, 325, 335, 345, 355, 365, 385, and cumulative G.P.A. of 2.50 or higher.

480-489 Independent Study

Variable credit. Upon the initiative of the student, a program of study may be organized with a faculty member on a topic of mutual interest.

Engineering

See Department of Physics, page 57.

Department of English

Professors Campbell (*Chair*), Dwyer, Sarracino

Associate Professors Martin, Rohrkemper

Assistant Professors Frawley, Mead

(*Director of Professional Writing Program*)

Lecturer: O'Donnell (*Supervisor, English Secondary Education Program*)

Bachelor of Arts

The Department of English offers an education which stresses both the knowledge and effective use of language, and an understanding and appreciation of our literary heritage. Excellence in both writing and literary studies is the fundamental aim of the Core Program and of

the rigorous and comprehensive tracks which prepare students for graduate training in English or professions such as law and medicine, for professional writing careers in a variety of fields, or for teaching at the secondary level of education.

The literature track requires English 209, 241 or 242, 301, and 394; three 200 level English courses, two with middle digit 2 (one of which must be prior to 1800); three 300 level English courses, one with middle digit 1, and two with middle digit 9 (one of which must be prior to 1800); one English course with the middle digit 8; three English electives above the 100 level; and Modern Language 112 or higher.

The professional writing track requires English 185, 209, 241 or 242, 302, and 393; three 200 level English courses, two with middle digit 2 (one of which must be prior to 1800), and one with middle digit 8; two 300 level English courses, one with middle digit 1, and one with middle digit 9; one English elective above the 100 level; one English elective above the 100 level; two courses from English 382, 384, or 385; one professional writing elective from English 281, 282, 283, 284, 381, 382, 385, 386, or 473; Computer Science 120; and Modern Language 112 or higher.

The secondary education track requires English 185, 209, 241, 242, 301, 302, 306, and 332; two 200 level English courses with middle digit 2 (one of which must be prior to 1800); one course from English 381, 384, or 385; one 300 level English course with middle digit 1; one English elective; Modern Language 112 or higher; and Education 205, 230, 305, 415, and 473.

English majors in all tracks must successfully complete a Modern Language course at the 112 level, or higher, if so placed.

An English major may not use any English 100-level course except English 100 or English 150 to satisfy core or major requirements.

The Department of English offers *minors* in literature and professional writing. Each minor requires 24 credits distributed as follows: **Literature** – English 209 and either 241 or 242; two 200 level English courses with middle digit 2 (one of which must be prior to 1800); three 300 level English courses, one with middle digit 1, and two with middle digit 9 (one of which must be prior to 1800); and one English elective. **Professional Writing** – English 185, 209, and 241 or 242; two 200 level English courses, one with middle digit 2, and one with middle digit 8; three 300 level English courses, one with middle digit 8, and one with middle digit 9; and one English elective with middle digit 8.

011 Fundamentals of Composition

3 credits. An introduction to various forms of academic prose, with an emphasis on developing students' fluency and voice in writing. *Credits are not applicable to the 125 required for graduation.* Staff.

100* Writing and Language

3 credits. **(Power of Language)** A writing course focusing on writing as a process of discovery of ideas, drafting, revision, and editing. Students read, write, and speak about a variety of aspects of the power of language. Assignments may include but are not limited to linguistic analysis, history of the language, and the analysis of language in and out of contexts. Topics include writing and literature, writing and persuasion, and writing and society. Staff. *Note: A student may be placed in English 100 or 150. Those assigned to English 100 must complete this course to satisfy the Power of Learning core and may not enroll in English 150. A student placed in English 150 may not enroll in English 100.*

105* Introduction to Literature

3 credits. **(Cultural Heritage)** A study of the different genres of literature, intended to develop the ability to analyze, evaluate, and appreciate literature. Readings are drawn from major authors such as Homer and Shakespeare. Staff.

110* Literature: Expressive Form

3 credits. **(Creative Expression)** A study of how different forms of literature produce different aesthetic experiences and responses. The course will focus on a specific theme such as war, the self, the family, or contemporary culture to make comparisons between genres more obvious. Poetry, drama, short story, essay, film, and the novel are possible genres for consideration. Staff.

112* Introduction to Poetry

3 credits. **(Cultural Heritage)** A study of the English and American lyric from Old and Middle English through the Renaissance, 18th, 19th centuries, to the present day. Staff. *Note: This course was previously listed as English 115, The Lyric Tradition. Students who completed and have credit for English 115, may not enroll in English 112.*

113* Introduction to Drama

3 credits. **(Values and Choice)** The analysis of character and motive in 8-10 plays. A psychological approach will emphasize how actions and words reveal personality. Staff.

114* Introduction to Fiction

3 credits. **(Values and Choice)** Identifying values and making choices through a study of fictional narratives: short stories, novellettes, and novels. Staff.

116* Film as Literature

3 credits. **(Creative Expression)** An introduction to film as an art form with particular attention to the discourse of film: how film "speaks" to us; how we speak about film. Staff.

121* Money and Status in American Literature

3 credits. **(Values and Choice)** This course begins by examining Max Weber's analysis of the "Protestant Work Ethic," and other political, philosophical and historical underpinnings of wealth in America, including the earliest visions of America as a new Eden, an abundant paradise. Students will read ten important works, and each student will keep a journal to be used in discussion groups and also as a source for essays. Of five or six essays written, several will be selected by the student to be rewritten and handed in for grading. There will also be periodic short quizzes and a final examination. Prof. Sarracino.

135* Shakespeare Through Performance

3 credits. **(Creative Expression)** Students gain a deep critical and imaginative understanding of Shakespeare's plays and a knowledge of the Elizabethan theatre and its stage conventions by reinforcing textual analysis with informal performance of scenes from several key works. Staff.

150* Advanced Writing and Language

3 credits. **(Power of Language)** A writing course designed to explore the writing process while studying the history of the English language, its past and present uses and powers. Students will be writing, reading, and speaking about a variety of aspects of the history and power of language. Assignments may include but are not limited to linguistic analysis, history of the language, de-constructive techniques, and the analysis of language in and out of contexts. *Note: A student may be placed in English 100 or 150. Those assigned to English 100 must complete this*

course to satisfy the Power of Learning core and may not enroll in English 150. A student placed in English 150 may not enroll in English 100. Staff.

185 Introduction to Professional Writing

3 credits. An introduction to the varieties of discourse and research in many professional areas and including instruction in basic terminology and graphic techniques. *Prerequisites: Power of Language requirement, Computer Science 120, and permission of the instructor.* Profs. Hergert, Mead, Rohrkemper.

209 Introduction to English Studies

3 credits. The study of English as an academic discipline with emphasis on close reading and theories of textual analysis, library research on literary, pedagogical, and rhetorical topics, and terminology of language and literary analysis, among other primary considerations. **Required of English majors and recommended for those considering the English major.** Staff.

212* Forms of the Quest

3 credits. **(Creative Expression)** A study of the literature of the quest, with an emphasis on literary form as a product of individual creativity and collective culture. The class will focus on lyric forms, narrative forms, tragic forms, and comic forms in works such as Homer's *Odyssey*, Virgil's *Aeneid*, and Dante's *Divine Comedy*. *Note: This course does not fulfill the 31-(genre) requirement for English majors or minors.* Staff.

221* The Literature of Medieval England

3 credits. **(Cultural Heritage)** A study of the literature and culture of Medieval England, with an emphasis on sexual roles, philosophy and cosmology, historical events, and the literary genres of this formative period in English history. *Course fulfills the pre-1800 requirement.* Prof. Martin.

222* Literature of the English Renaissance

3 credits. **(Cultural Heritage)** A study of the literature and culture of the Renaissance, with an emphasis on sexual roles, philosophy and cosmology, political values, and the literary forms of this yeasty time of rebirth and new knowledge. *Note: Students who have credit for English 320 or 322 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Martin.

223* English Neo-Classicism

3 credits. **(Cultural Heritage)** A study of the prose and poetry from the period of 1600 to 1800 with an emphasis on Dryden, Pope, Swift, Sterne, and Johnson. *Note: Students who have credit for English 323 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Dwyer.

224* English Romanticism

3 credits. **(Cultural Heritage)** A study of the verse and prose of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats, developing various concepts of Romanticism. *Note: Students who have credit for English 327 may not enroll in this course.* Prof. Dwyer.

225* Victorian British Literature

3 credits. **(Cultural Heritage)** A study of selected prose and poetry of the Victorian Age, emphasizing the relationship of the literary text to social and cultural conditions. Authors will include Tennyson, Dickens, Carlyle, the Brownings, and Hardy. *Note: Students who have credit for English 328 may not enroll in this course.* Prof. Frawley.

226* Twentieth Century British Literature

3 credits. **(Cultural Heritage)** An examination of British literary, cultural, and social thought in the twentieth century as evidenced in a number of literary works by authors from England and other nations of the British Commonwealth. *Note: Students who have credit for English 329 may not enroll in this course.* Profs. Frawley, Rohrkemper.

241* American Literature I

3 credits. **(Cultural Heritage)** This course will assume general familiarity with American history and literature and build upon that basic knowledge to explore themes in American literature from the time of the Puritan settlers through the later nineteenth century, focusing on the Civil War. *Note: Students who have credit for English 340 may not enroll in this course.* Prof. Sarracino.

242* American Literature II

3 credits. **(Cultural Heritage)** An examination of American literary, cultural, and social thought from the late nineteenth century to the present, as evidenced in a number of representative texts. *Note: Students who have credit for English 341 or 342 may not enroll in this course.* Prof. Rohrkemper.

245* Growing Up in America

3 credits. **(Values and Choice)** The main purpose of this course is to allow students, through a careful reading of important American novels and biographies, better to understand the distinct experiences that comprise growing up in America. In this course we will explore deeply both the uniqueness of experiences of growing up in America, and also the universality of shared problems, crises, challenges, and joys. Staff.

246* Minority Voices in American Literature

3 credits. **(Cultural Heritage)** A study of major works of American literature by writers who traditionally have been marginalized on the basis of race, class, and gender. Staff.

251* The Literature of Laughter

3 credits. **(Creative Expression)** A study of works from a variety of literary genres which create and comment on humor. Students will read a fable, short stories, novels, light verse, a play, and humorous essays, as well as essays which deal with the theories of humor. Comic forms represented include humorous social commentary, satire, and black comedy. Works to be read include "My Life and Hard Times," "A Modest Proposal," "Praise of Folly," and *Catch-22*. *Prerequisite: Completion of Power of Language requirement.* Staff.

281* Writing and Analyzing the Short Story

3 credits. **(Creative Expression)** Students will analyze classic short stories using the language and concepts of literary criticism through discussion, oral presentations, and a major research paper. Emulating classic literary models, they will write original short stories, revising according to detailed critiques by their peers and the instructor. *Prerequisite: Completion of Power of Language requirement.* Staff.

282 Writing in the Health Professions

3 credits. Students will read and analyze the discourse common to the medical professions in addition to literature about the profession. Students will practice the forms of medical writing, culminating in a research project. *Prerequisite: Permission of instructor. Professional Writing majors must also have completed English 185.* Spring semester, alternate years. Prof. Mead.

283 Writing for Government and the Judicial System

3 credits. A survey of the types of writing common in government, politics, and law. Students will practice basic legal analysis, statistical analysis, persuasion, and more advanced forms of legal writing such as the appellate brief. **Highly recommended to pre-law and political science majors.** *Prerequisite: Permission of instructor. Professional Writing majors must also have completed English 185.* Prof. Mead.

284 Writing in the Social Sciences

3 credits. Students will analyze articles, books, reviews, and research in the fields of psychology, political science, anthropology, sociology, history, and economics. In addition, students will practice writing a variety of research forms, including the observation, experiment, survey/interview, etc. *Prerequisite: Professional Writing majors must have completed English 185.* Alternate years. Prof. Mead.

301 History of the English Language

3 credits. A study of the evolution of the English language from its Indo-European and, specifically Germanic origins into its modern form by observation of changes in vocabulary, grammar, and pronunciation. These changes are examined, primarily, in selected readings from Olde, Middle, and Renaissance English literature. Fall semester, alternate years. Prof. Martin.

302 Grammar and Linguistics

3 credits. A summary of traditional, transformational, and transactional grammars; and structural, social, and psycholinguistics, including biological and environmental influences on language acquisition. Spring semester, alternate years. Prof. Mead.

305 Methods Seminar in Teaching Literature

4 credits. Approaches to teaching literature at the secondary level, practical application of various methodologies through internships in local middle or high schools. *Prerequisite to professional semester.* Prof. O'Donnell.

306 Methods Seminar in Teaching Language and Composition

3 credits. The teaching of English grammar and usage, with reference to teaching composition at the secondary school level, practical application of various methodologies through teaching internships in the classroom and/or the Learning Center. *Prerequisite to professional semester.* Prof. O'Donnell.

311 Genre Studies

3 credits. A study of a particular genre such as autobiography or the non-fiction novel. Representative works will be discussed. Since the course may vary in focus, it may be repeated for credit, providing the content is not duplicated. Staff.

313 Studies in Drama

3 credits. A study of drama considering such issues as links between the visual and verbal representation of meaning, and the development of the concepts of comedy and tragedy. Since the course may vary in focus from early drama to modern, it may be repeated for credit, providing the content is not duplicated. Profs. Campbell, Martin.

317 Studies in the Novel

3 credits. A study of the novel, including the development of the genre and its literary history in particular periods. Representative works will be discussed. Since the course may vary in focus from early forms to modern, it may be repeated for credit, providing the content is not duplicated. Fall semester. Staff.

318 Studies in Poetry

3 credits. A study of at least three major poets from one or more periods of American or English literature. Staff.

332 Shakespeare

3 credits. A study of representative works of Shakespeare. Spring semester. Profs. Campbell, Martin.

352 The Fantastic in Literature

3 credits. A study of major works of fantasy (*Alice in Wonderland*, *The Hobbit*, *The Golden Key*, and others) focusing on thematic significance of "the journey" and attempting to define "the fantastic" with the kind of precision and clarity directed toward "the tragic" or "the comic." Fall semester, alternate years. Prof. Sarracino.

357 Women and Literature

3 credits. A study of the effects on women writers and readers of a male dominated literary tradition. Alternate years. Prof. Frawley.

371-379 Special Topics

3 credits. Courses involving specific subjects chosen in response to student/ faculty interest. Staff.

381 Creative Writing (Poetry, Prose)

3 credits. The writing of original poetry or prose. Graded pass/no pass. *Prerequisite: permission of instructor.* Prof. Sarracino.

382 Technical Writing

3 credits. A course emphasizing clarity and precision in writing and including instruction in oral and graphic presentation of technical and scientific information. *Prerequisite: Professional Writing majors must have completed English 185 and one 200 level Professional Writing course.* Profs. Hergert, Mead.

384 Advanced Composition and Editing

3 credits. A laboratory/lecture course in advanced writing and professional editing. *Prerequisite: English 185 and permission of instructor, Professional Writing majors must also have completed a 200 level Professional Writing course.* Prof. Mead.

385 Writing for Publication

3 credits. Advanced study of the writing of non-fiction copy editing and of

techniques for promoting one's own manuscripts. *Prerequisite: Permission of instructor. Professional Writing majors must have completed English 185 and a 200 level Professional Writing course.* Staff.

391 Chaucer

3 credits. A study of *The Canterbury Tales* and shorter works, with a focus on the art of the tales and on cultural issues such as the place of women in medieval society. *Note: Students who already have credit for English 331 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Martin.

393 Seminar in History and Theory of Rhetoric and Composition

3 credits. A consideration of a variety of topics: history of rhetoric, linguistics, and modern heuristics in teaching writing. *Prerequisites: Professional Writing concentration, English 185, and one 200 level Professional Writing course.* Spring semesters, alternate years. Prof. Mead.

394 Senior Seminar in Literary Theory

3 credits. A seminar for literature majors on the history of literary theory and criticism. *Prerequisites: English Literature concentration, or permission of the instructor.* Fall semester, alternate years. Prof. Dwyer.

395 The Renaissance Epic: Spenser and Milton

3 credits. A study of representative works by Spenser and Milton, with emphasis on issues of Renaissance culture such as religion, politics, and gender. *Note: Students who have credit for English 333 may not enroll in this course. Course fulfills the pre-1800 requirement.* Prof. Martin.

397 Major Authors

3 credits. A study of the writings of one or more American or British author(s) such as Blake/Pope, Faulkner/O'Neill, Austen/Eliot, Hall/Bly/Kinnell. Since the authors studied may vary from term to term, the course may be repeated for credit, provided the content is not duplicated. Staff.

470-479 Internships

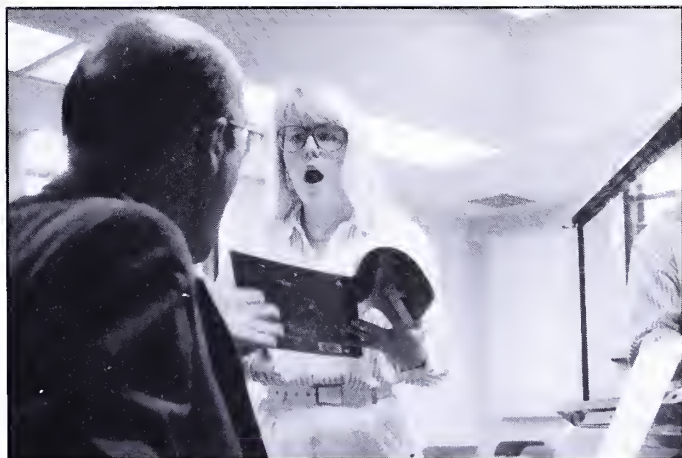
1-3 credits. On-campus internships may be requested in the student's sophomore, junior, or senior year. Off-campus internships are for students proven competent in on-campus internships or judged as having special aptitudes for the specific internship. *Applications for internships in the Department of English are due March 15 for summer and fall semesters, and November 15 for spring semester.* Prof. Mead.

480-489 Independent Studies in English

2-3 credits. A course designed to give the individual student the opportunity to pursue work in an area of major interest under the guidance of a member of the Department of English. See the Department Chair for registration instructions. Staff.

Education 305 Practicum in Secondary Education

4 credits. The exploration and application of various teaching styles and strategies in the teaching of literature in the secondary-school English classroom; in-school observations and internships as paraprofessional experience. *Prerequisite: Education 230.* Prof. O'Donnell.



Department of Fine and Performing Arts

Professors Douglas, Harrison (*Chair*), Kitchen
Associate Professors Friedly, Palmquist, Stites
Assistant Professors Hunter, Rohrbacher, Severeid
Instructor Schellenberg
Lecturer Ronning

Bachelor of Arts; Bachelor of Science

The department offers three majors which lead to the degree of Bachelor of Science in Music Education, Bachelor of Science in Music Therapy, or Bachelor of Arts in Music. No majors are offered in the areas of Art, Dance, or Theater. Minors are offered in Visual Art, Music, and Theater. The music programs are fully accredited by the National Association of Schools of Music.

Visual Arts

The academic and the practical courses in the visual arts program aim to refine students' creative potential, expand their judgment of the visual arts, and discern the contrasts and relationships among the arts of our Western culture and those of non-Western traditions.

Minor in Visual Arts. The minor in Visual Arts requires Art 105, 106 or 220, 155, 203, and six hours of electives in visual arts courses. Communications 215 may be one of the elective courses.

105* Drawing I

3 credits. (**Creative Expression**) Studio practice in basic drawing media for sketching and rendering both live and inanimate subjects. Profs. Friedly, Schellenberg.

106 Ceramics I

3 credits. Introduction to ceramic design and history, with emphasis on fundamental construction, decorating, glazing and firing techniques, and operation of the machinery of the medium. Prof. Friedly.

110 Drawing II

3 credits. An intermediate-level course that stresses further conceptual, pictorial, and technical development beyond Drawing I, with an emphasis on personal theme and content. *Prerequisite: Art 105 or permission of the instructor.* Profs. Friedly, Schellenberg.

155* Introduction to Art

3 credits. (**Cultural Heritage**) An overview course to introduce students to the range and theories of European/American painting and to acquaint them with ramifications social, political, aesthetic, and economic revealed by the arts; with further emphasis on modes of art deriving from other than our historic Western impulses. Prof. Schellenberg.

203* Twentieth Century American Art

3 credits. (**Cultural Heritage**) An illustrated, lecture course in present-century developments in American painting, sculpture, architecture, and the lesser arts. Prof. Friedly.

205 Painting

3 credits. Studio easel painting in opaque media, with stress on pictorial

organization and application of color theories. *Prerequisite: Art 105 or permission of the instructor.* Prof. Schellenberg.

206 Ceramics II

3 credits. An intermediate-level course in the medium with emphasis on developing and refining studio techniques and integration of form and idea. *Prerequisite: Art 106.* Prof. Friedly.

220* Sculpture

3 credits. (**Creative Expression**) An exploration in the three-dimensional medium of traditional and contemporary ideas, basic problems in design, and instruction in the use of the sculptor's materials and techniques. Prof. Friedly.

351 Printmaking

3 credits. Practice in the methods of relief, intaglio, and silk screen printing, and instruction in the use of the printer's machinery. *Prerequisite: Art 105 or permission of the instructor.* Prof. Friedly.

Dance

DA 101* Interpretive Movement

1 credit. (**Physical Well Being**) Designed to build the body with isolation, flexibility, and rhythmic exercises. Offers problem solving exercises to aid the student to think logically, communicate clearly, to work and share ideas with people, and to develop a sensitivity and body awareness which will lend itself to creative activity. Graded P/NP.

DA 102* Introduction to Ballet

1 credit. (**Physical Well Being**) Emphasizes basic positions, vocabulary (French), and body placement. Beginning barre and floor exercises included. Graded P/NP.

Music

The music courses are designed to develop student comprehension and appreciation of music as a cultural force in the past and present. Music majors are prepared for professional careers in education, therapy, and studio teaching, as well as graduate study.

A copy of departmental graduation requirements for music majors (in addition to those listed below), including proficiency requirements in piano and voice, and recital participation and attendance, may be obtained at the department office.

The department has adopted requirements for junior standing for music majors. A copy of these requirements is available in the department office.

The music education major requires Music 100, 101, 102, 103, 104, 150, 201, 202, 203, 204, 205, 231, 234, 237, 238, 301, 311, 312, 321, 322, 343, 344, 440, 441, 442, 443, 471, a minimum of twelve credits of applied music instruction, a minimum of seven credits in ensemble participation, a senior recital, and Education 205.

The music education major is approved by the Pennsylvania Department of Education and the National Association of Schools of Music.

The music therapy major requires Music 100, 101, 102, 103, 104, 141, 150, 151, 201, 202, 203, 204, 205, 231, 234,

237, 252, 301, 321, 343, 353, 353L, 354, 440, 441, 442, 443, 455, 455L, 456, 456L, 473, 474, 475, and 479; a minimum of twelve credits in applied music instruction; a senior recital; and a minimum of six credits in ensemble. Also required are Biology 201, Psychology 221 and 334. Specific courses to be included in the student's Core Program are Biology 105 or 111, Mathematics 151, and Psychology 105. A six-month internship in an approved clinical facility is required for the music therapy degree and is taken after the completion of the four-year music therapy program.

The music therapy program is approved by the National Association for Music Therapy and the National Association of Schools of Music.

In order to graduate, a music therapy or music education major must maintain the following standards:

(1) *A music therapy major* must earn a grade of C- or better in all music and music therapy courses. *A music education major* must earn a grade of C- or better in all music and music education courses, and in Education 205.

(2) *Music therapy majors* must satisfy the standards and requirements in all field work education, including clinical practicums and the internship. *Music education majors* must satisfy the standards and requirements of the educational practicum and student teaching experiences.

The Bachelor of Arts in Music normally requires Music 100, 101, 102, 103, 104, 201, 202, 203, 204, 205, 321, 322, 419, 440, 441, 442, 443, twelve credits in applied music, a senior recital, and three hours of ensemble credit. The student must also complete Modern Language 112 (or a higher course if so placed by testing). The music requirements of the Bachelor of Arts degree are flexible and are determined by the needs and interests of each student. Under the guidance of a departmental advisor, a Bachelor of Arts music major works out a program which includes at least 40 credits of music courses.

The Minor in Music provides students with opportunities to acquire and develop skills in music theory, music performance, music history and literature, and allows each student to pursue his or her personal musical interests.

The Minor in Music requires Music 101-103; 102-104 or 305; 105; 441 or 442 or 443; four semesters of instruction on one instrument or in voice, with registration in Music 100 (Repertoire Class) in each of the same semesters; minimum of two credits of music ensemble participation; and a minimum of three credits of music electives.

A student electing to minor in music must consult with the department chair who assigns a music faculty member to assist the student's academic advisor as necessary.

The Department has a Preparatory Division which offers instruction to pre-college students, adults, and college students who desire to take instruction without credit.

Instruction is available from departmental faculty and other qualified teachers. Interested persons should contact Prof. Debra Ronning, director of the Preparatory Division.

100 Repertoire Class

0 credit. This class provides performance opportunities for students in applied music. It meets for 1 hour each week and is required for all music majors and minors who are enrolled for applied music instruction.

101 Music Theory

2 credits. Fundamentals of music theory, harmony and form with emphasis on scales, keys, modes, notation, clefs, diatonic triads and non-harmonic tones. Fall semester. Prof. Grubb.

102 Music Theory

2 credits. A continuation of Music 101, with an introduction to modulation, seventh chords, borrowed chords, secondary dominant and leading tone chords. Includes binary and ternary forms. *Prerequisites: Music 101, 103, or permission of instructor.* Spring semester. Prof. Grubb.

103 Fundamentals of Sight Singing and Training

1 credit. Music reading and ear training according to the Kodaly concept using syllables based on moveable "Do," kinesthetically reinforced by hand signs. Study and drill in rhythm will include the use of the basic beat patterns. Linear dictation including rhythmic elements. Aural skills related to theoretical analytical materials covered in Music 101. *Corequisite: Music 101.* Fall semester. Prof. Grubb.

104 Sight Singing and Ear Training

1 credit. A continuation of 103 including chromaticism, modulation, modes and more difficult rhythms and intervals, C clefs. *Prerequisite: Music 103 or permission of instructor.* Spring semester. Prof. Grubb.

105* Introduction to Music Literature

3 credits. **(Cultural Heritage)** Introduction to the music of the Western world, major composers, and selected famous compositions, with emphasis on listening to music from the Baroque era to the present. Profs. Douglas, Harrison, Stites.

106* Interpretation of Music

1 credit. **(Creative Expression)** This is a course for general college students who can read music and who wish to participate in a musical ensemble or continue private lessons. It is designed to supplement the musical experience by developing a deeper understanding of musical interpretation, as distinct from technique. In the lectures which discuss particular aspects of interpretation, examples from those works being prepared for performance in the ensembles and lessons will be used. This course fulfills the AU core requirement in "Creative Expression" when coupled with enrollment in an ensemble or private instruction for both semesters the same academic year in which it is taken. One 50-minute class meeting per week. Spring semester. Prof. Douglas.

111 Voice Class

1 credit. Study of the fundamentals of breath control, tone production, and development of vocal technique. Open to all students. Profs. Mekeel, Stites.

115* Music Fundamentals at the Keyboard

3 credits. **(Creative Expression)** This course provides the student with basic skills in producing and reading music at the keyboard. Attention is given to ear training, basic keyboard technique, and musicianship, as well as to sight reading. The course utilizes the department's digital piano laboratory. Daily practice is required. Prof. Douglas.

117 Piano Class

1 credit. Basic piano skills. Open to all music majors; required of those whose first applied instrument is not piano. *Prerequisite: music major.* *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Prof. Ronning.

119 Guitar Class

1 credit. An introductory course emphasizing studies in basic chords and

note reading. Course also surveys various guitar styles, the performers, music, and types of guitars. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Cullen.

120 Guitar Class

1 credit. A continuation of Music 119 with emphasis on bar chords, accompaniment patterns, and note reading. Includes an introduction to classical guitar technique, history, performers, and classical literature. *Prerequisite: Music 119 or permission of instructor.* *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Prof. Cullen.

141 Recreational Music

2 credits. Survey of recreational music resources and activities, with emphasis on the development and application of leadership and music performance skills in recreational and therapeutic settings. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

150 Professional Seminar

0 credit. A weekly seminar for music majors enrolled in professional degree programs. Guest speakers, faculty, and students present topics of mutual interest, including career development, application of music skills, and professional service. Required of music therapy and music education majors each semester. Staff.

151 Introduction to Music Therapy

2 credits. A survey of music therapy through lecture-demonstration sessions, readings, student reports, and field trips. Emphasis on the potentials of music therapy with a variety of populations. *Prerequisite: music major or permission of instructor.* Fall semester. Prof. Rohrbacher.

201 Advanced Music Theory

2 credits. Advanced harmony including ninth, eleventh, and thirteenth chords, chromatic harmony and form and analysis. *Prerequisite: Music 102, 104.* Fall semester. Staff.

202 Advanced Music Theory

2 credits. A continuation of Music 201 with emphasis on late 19th- and 20th-century harmonic practice. Includes composition using 20th-century techniques. *Prerequisite: Music 201, 203.* Spring semester. Staff.

203 Advanced Sight Singing and Ear Training

1 credit. Continued emphasis on reading and dictation skills with concentration on modulation and chromaticism using some 20th-century material. C clefs. *Corequisite: Music 201.* Fall semester. Prof. Grubb.

204 Advanced Sight Singing and Ear Training

1 credit. A continuation of Music 203 with concentration on reading atonal melodies and 20th-century material. *Corequisite: Music 202.* Spring semester. Prof. Grubb.

205* Music of Non-Western Cultures

3 credits. **(Foreign Cultures and International Studies)** Contemporary music indigenous to eight non-Western geographic regions of the world are studied and compared in terms of tonal and rhythmic attributes, and as an approach to promoting socio-cultural awareness. Prof. Rohrbacher.

231 Brass Class

1 credit. Methods of tone production, fingerings or positions, care and repair, and methods and materials for teaching trumpet or cornet, French horn, baritone, trombone, and tuba. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Profs. Moore, Webster.

234 Percussion Class

1 credit. Methods of tone production, care and repair, and methods and materials for teaching snare drum, cymbals, timpani, and other percussion instruments. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Luckenbill.

235 History of Jazz

3 credits. Exploration of the origins and development of jazz as an American art form. Offered on demand. Prof. Kitchen.

237 Elementary String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching violin, and viola in individual and class settings. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Leithman.

238 Intermediate String Class

1 credit. Method of tone production, fingerings, care and repair, and methods and materials for teaching cello and double bass in individual and class settings. *Prerequisite: Music 237. The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Prof. Zurfluh.

242 Mozart and Eighteenth-Century Classicism

3 credits. **(Cultural Heritage)** Study of a symphony, a sonata, a string quartet, several concerti, lieder, an opera, masses and other sacred choral works by Mozart provides understanding of how the composer exemplified eighteenth-century classicism in his music. Prof. Stites.

252 Psychology of Music

2 credits. Study of acoustics and the psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: Music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

301 Keyboard Harmony

2 credits. A course designed to provide functional piano skills in harmonizing melodies and improvising at the keyboard. *Prerequisites: Music 202-204, 269.* Fall semester. Prof. Kitchen.

305 Teaching Music in the Elementary Classroom

3 credits. Provides students opportunities to develop skills in singing, song leading, listening, creating, and performing. Emphasizes applying knowledge and skills to provide musical experiences for young children and work with music specialists. Includes observation of music instruction and performance. Prof. Palmquist.

311 Music in the Elementary School

3 credits. Study of techniques, methods and materials used in teaching elementary music classes. Emphasizes performance, observation, assessment, and organization through observation, teaching, and participation in class music activities. *Prerequisite: Music major or permission of instructor.* Fall semester. Prof. Palmquist.

312 Music in the Secondary School

3 credits. Methods and materials for secondary general music classes and performance groups, with special concentration on the junior high school general music class, adolescent voice problems, and the successful organization and direction of choral and instrumental performing groups. Observations and laboratory experiences included. *Prerequisite: Music major or permission of the instructor.* Spring semester. Prof. Kitchen.

321 Conducting Fundamentals and Instrumental Techniques

3 credits. Instruction in the fundamentals of conducting. Topics include conducting techniques, instrumental methods and problems, score reading, and interpretation. *Prerequisites: Music 202 and 204 or permission of instructor.* Fall semester. Prof. Kitchen.

322 Choral Conducting

3 credits. A continuation of Music 321 with an emphasis on choral techniques. *Prerequisite: Music 321.* Spring semester. Prof. Stites.

337 Advanced String Class

1 credit. A continuation of Music 238 providing in-depth study of violin, viola, cello, or string bass, and a study of string ensemble techniques, methods, and literature. *Prerequisite: Music 238. The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Staff.

343 Woodwind Class

1 credit. Methods of tone production, fingerings, maintenance, care and repair, and methods and materials for teaching flute, oboe, clarinet, bassoon, and saxophone. *The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Fall semester. Prof. Hall-Gulati.

344 Woodwind Class

1 credit. A continuation of Music 343. *Prerequisite: Music 343. The department reserves the right to offer this course as private lessons if fewer than 5 students are enrolled.* Spring semester. Prof. Hall-Gulati.

353 Music Therapy Techniques

2 credits. The study of behavioral and music therapy techniques used in clinical practice, with emphasis on observation, assessment, program implementation, and accountability. *Prerequisite: Music 252.* Fall semester. Prof. Rohrbacher.

353L Music Therapy Techniques Laboratory

1 credit.

354 Music Research Methods

2 credits. Introduction to music research. Emphasis on reading, evaluating and applying research findings and on using research techniques in music therapy and music education. Includes the collection, codification, interpretation, and presentation of data. *Prerequisite: Psychology 105.* Spring semester. Prof. Palmquist.

371-379 Special Topics

Variable credit. This sequence of courses permits the Department to offer courses to any group of students who express an interest in a particular area of study that is not a regular part of the curriculum. Staff.

419 Counterpoint

2 credits. A study of contrapuntal techniques of the sixteenth through twentieth centuries through representative composers and original compositions. *Prerequisites or corequisites: Music 202 and 204.* Spring semester. Prof. Douglas.

431 Piano Methods and Materials

2 credits. Modern methods in teaching piano to children, youth, and adults. Course includes a survey of teaching materials for various stages of progress, teaching demonstrations, and experience. *Credit for Music 431 is given only upon completion of Music 432. Prerequisites: two semesters of Music 269.* Not offered 1994-95. Prof. Ronning.

432 Piano Methods and Materials

2 credits. A continuation of Music 431. *Prerequisite: Music 431.* Not offered 1994-95. Prof. Ronning.

440 Instrumental Arranging

2 credits. Arranging music for large and small ensembles; class performance of student works is combined with a study of the characteristics of each standard instrument and instrumental group. *Prerequisites: Music 202, 204.* Fall semester. Prof. Douglas.

441 Music History and Literature I

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from antiquity until about the year 1700. Examples of great music will be ever present. *Prerequisites: Music 202 and 204 or permission of instructor.* Fall semester. Prof. Harrison.

442 Music History and Literature II

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians from around the year 1700 through the 19th century. Examples of great music will be ever present. *Prerequisites: Music 202 and 204 or permission of instructor.* Spring semester. Prof. Harrison.

443 Music History and Literature III

3 credits. A chronological study of the technical, stylistic, and social/historical developments related to Western music and musicians of the 20th century. Examples of great music will be ever present. *Prerequisites:*

Music 202 and 204 or permission of instructor. Not offered 1994-95. Prof. Harrison.

455 Music Therapy I: Principles

2 credits. A survey of literature on the nature and principles of music therapy, including theory, practice and research. The application of these principles according to specific client populations and preparation for clinical internship will be emphasized. *Prerequisites: Music 252, 353, 354; or permission of instructor.* Fall semester. Prof. Rohrbacher.

455L Music Therapy I Laboratory

1 credit.

456 Music Therapy II: Practices

2 credits. The study of philosophies and practices of disciplines as related to music therapy and the role of the music therapist as a treatment team member. Emphasis will be on the integration of the knowledge and skills associated with the practice of music therapy and issues related to professional employment. *Prerequisite: Music 455 or permission of instructor.* Spring semester. Prof. Rohrbacher.

456L Music Therapy II Laboratory

1 credit.

471 Professional Internship in Music Education

12 credits. Teaching experience and observation in elementary and secondary music classes. Instrumental and vocal emphases vary with student strengths and needs. *Prerequisite: permission of department.* Prof. Palmquist.

473-75 Practical Experiences I-III: Music Therapy

1 credit each. Supervised field experiences (observation and participation) in an approved clinical facility. A minimum of thirty hours for each clinical experience is required. Music therapy majors only. *Prerequisites: Music 141, 151.* Staff.

479 Professional Internship in Music Therapy

No credit. Six months of supervised practical experience with a registered music therapist in an NAMT approved facility. Taken only after completion of all other music therapy degree requirements. *Prerequisite: permission of instructor.* Prof. Rohrbacher.

481-489 Independent Study

Variable credit. The purpose of this course is to offer individual students opportunities for musical composition, arranging, performance or research under faculty supervision. *Prerequisite: permission of instructor.* Staff.

Applied Music and Ensembles

Students who register for applied music for credit must meet minimum standards established by the department and should contact the department office for a list of standards for each applied area. Students who have not attained the level necessary for credit may study through the Preparatory Division. Students in applied music advance as rapidly as their abilities permit. They must study technical exercises and literature from various musical periods and styles.

Students may register with or without credit for the established music ensembles and for other ensembles organized under faculty supervision; ensemble registration for credit may be repeated. All students must meet the standards for attendance at rehearsals and public performances established by the faculty directors. Ensembles are graded P/NP.

Music 106 must be taken with ensembles or private lessons to fulfill the Creative Expression requirement in the Core curriculum. See the description of Music 106.

268* Voice

1 credit. Profs. Mekeel, Stites.

269* Piano

1 credit. Music therapy and music education majors whose principal instrument is not piano or organ must enroll in Music 117 before Music 269. Profs. Harrison, Kitchen, Ronning, Schroeder.

270* Organ

1 credit. Prof. Schroeder.

271* Violin

1 credit. Profs. Palmquist, Rathnam.

272* Viola

1 credit. Profs. Palmquist, Rathnam.

273* Cello

1 credit. Prof. Zurfluh.

274* String Bass

1 credit. Prof. Zurfluh.

275* Guitar

1 credit. Prof. Cullen.

276* Flute

1 credit. Prof. Kirkpatrick.

277* Clarinet

1 credit. Profs. Hall-Gulati, Kitchen.

278* Oboe

1 credit. Staff.

279* Bassoon

1 credit. Staff.

280* Saxophone

1 credit. Profs. Hall-Gulati, Kitchen.

281* Trumpet/Cornet

1 credit. Prof. Webster.

282* French Horn

1 credit. Prof. Webster.

283* Trombone

1 credit. Prof. Moore.

284* Baritone/Euphonium

1 credit. Prof. Moore.

285* Tuba

1 credit. Prof. Moore.

286* Percussion

1 credit. Prof. Luckenbill.

360 Chamber Music

1/2 credit. General chamber music course from which groups such as Brass Ensemble, String Ensemble, Woodwind Ensemble, Chorale, Piano Trio, and Piano Ensemble will be formed as need arises.

361* Concert Choir

1 credit. Open to any student; acceptance based upon auditions by appointment. In addition to giving several performances prior to Christmas and participating in the annual Spring Concert, this group sings approximately twenty concerts in churches and schools in Pennsylvania and neighboring states each spring. Prof. Stites.

362 Choral Union

1/2 credit. Vocal ensemble open to any member of the student body (without prior audition). Its sections (SATB or SSA) are determined by the enrollment per part. Prof. Mekeel.

365* Orchestra

1 credit. Open to all qualified students; acceptance subject to approval by director. Presentation of several concerts during the year. String, chamber, and full orchestra music is performed. *Prerequisite for winds and percussion: permission of instructor.* Prof. Palmquist.

368 Jazz Lab

1/2 credit. The Jazz Lab offers small groups of students instruction in the basic skills of improvisation, stylization, and performance. The lab complements the jazz component of the Concert Band. Prof. Kitchen.

369* Concert Band

1 credit. Open to all qualified students; acceptance subject to approval by director. Performances include the annual winter and spring concerts and a number of off-campus appearances. Prof. Kitchen.

Theater

The minor in theater provides the student with opportunities to acquire and develop a broad range of skills and knowledge in theater design/technology or performance/literature, and allows the student the choice of concentrating in either of these areas.

The *minor in theater* requires the following: Theater 105, 155, 165, Dance 101, and two courses from English 113, 135, 313, and 332. For those completing the Design and Production concentration, Theater 255 and 350 are also required. For those completing the Performance concentration, Theater 360 and 365 are required.

105* Introduction to Theater

3 credits. **(Cultural Heritage)** Introduction to the various interrelated arts and disciplines that make up theater performance and production, such as acting, playwriting, directing, and scene design. Emphasis is on history, literature, and theory, with support from a textbook, audio-visual aids, analysis of scripts, and possibly one or more field trips. Profs. Hunter, Severeid.

155* Introduction to Theater Technology

3 credits. **(Creative Expression)** Examination and application of theater staging, design, and lighting. Topics include scenery design and construction, execution of technical effects, and theatre safety. Prof. Hunter.

165* Basic Acting

3 credits. **(Creative Expression)** Theory and practice of the art and craft of the stage actor. Skills are developed in voice, body involvement, script analysis, style and theory. Students participate in projects requiring the memorization, creation, and presentation of scenes. Profs. Hunter, Severeid.

255 Design and the Theater

3 credits. A course emphasizing the artistic interpretation of dramatic literature as stage designs and the methods for presenting these concepts. Drawing and drafting skills are not required for this course. *Prerequisite: Theater 155.* Prof. Hunter.

350 Theater Design/Technology Practicum

0 credit. Satisfactory completion of involvement in design and production for major college production.

360 Theater Performance Practicum

0 credit. Satisfactory completion of performance in major college theater production.

365 Advanced Acting

3 credits. An advanced course in acting techniques and styles. Students will study, interpret, and perform scenes from classic dramas in theater

history from the Greeks to the Absurdist. *Prerequisite: Theater 165.* Prof. Severeid.

French

See Department of Modern Languages, page 50.

German

See Department of Modern Languages, page 50.

Department of History

Professors K. Kreider, Mumford (*Chair*), Ritsch, Vassady, Winpenny
Associate Professor Poole

Bachelor of Arts

History, the inquiry into the deeds and thoughts of man's past, is a valuable and enjoyable basis for a liberal education. The student of history invariably acquires, through this vicarious experience, a better perspective which can lead to sound judgment and wise decisions. Furthermore, an understanding of the repetitive and complex nature of man's perennial problems produces in the student a healthy sophistication and a steady self-confidence which help to dissolve the uncertainties of modern life.

The department's program is designed to prepare students for further study in graduate programs in history, theology, government, law, museum studies, and library science; or for careers in teaching, government service, and business.

The *history major* requires that a student satisfactorily complete 39 hours of course work in history: History 115 (or its equivalent) and 390; nine hours in United States history; nine hours in European history; six hours in non-United States, non-European courses; and nine hours in history electives.

History is one of the major areas in the social studies major which prepares a student for certification to teach in secondary schools. Students with interest in this area should read the detailed descriptions in the interdisciplinary section of this catalog.

A student may acquire a Bachelor of Arts degree as a history major and receive certification in social studies. For further explanation, speak to a member of the Department of History.

Combinations which allow the student to major in history and to pursue training for other careers are possible. For example, a student may major in history and also take a recommended program of courses in business. Consult with members of the department for other options in combination with communications, political science, or other program areas.

History majors must successfully complete a Modern Language course at the 112 level (or higher if so placed).

For a *minor in history*, the student must successfully complete 18 hours of course work, composed of the following courses: History 115, 201, 202, and three additional history courses. Students with specific career or personal interests are encouraged to discuss these with the department chair.

115* Modern European History

3 credits. **(Cultural Heritage)** An examination of the major developments that have taken place in European history since 1500. This course will not survey all of the developments over 500 years, but choose those that seem significant in their impact on subsequent developments. Staff.

201* History of the United States to 1877

3 credits. **(Social World)** An examination of the major developments in U.S. history from the beginning to 1877. This course will include a discussion of interpretations of the American past. Fall semester. Profs. Mumford, Winpenny.

202* History of the United States since 1877

3 credits. **(Social World)** An examination of the major developments in U.S. history since 1877. This course will include interpretations of the American past. Spring semester. Profs. Mumford, Winpenny.

205 Modern Far East

3 credits. A general survey of China, Japan, Korea, and Southeast Asia from about 1800 to the present, with special emphasis on East-West relations. Prof. Mumford.

208* Technology and Values in the American Experience

3 credits. **(Values and Choice)** An effort to understand the values implicit in the choices that have been made in substituting a newer technology for an older technology throughout American history. Transportation, systems of production, the generation of power, medicine, and armaments constitute areas of particular emphasis. Prof. Winpenny.

210* Europe Since 1789

3 credits. **(Social World)** An examination of major political, social, and cultural developments in Europe from the French Revolution of 1789 to modern times. Prof. Vassady.

212* Race and Ethnicity in American History

3 credits. **(Values and Choice)** An analysis of the 19th and 20th century historical experience of ethnic and racial groups in America, with a focus on the value systems they brought to America and the American value system by which they and their children were judged after their arrival here. Prof. Vassady.

215* English History

3 credits. **(Cultural Heritage)** An introduction to the political, social, and cultural history of England from the Anglo-Saxons to the Stuarts, with particular attention to the growth of the monarchy, parliament, the common law, and the church. Fall semester. Prof. Poole.

216* Modern Britain

3 credits. **(Cultural Heritage)** An introduction to the political, social, and cultural history of modern Britain from the Stuarts to the present,

with particular attention to the growth of the monarchy, parliament, and the British Empire. Spring semester. Prof. Poole.

217 Europe in the Nineteenth Century

3 credits. Nineteenth-century Europe from the Vienna Congress to World War I, with particular emphasis on the conservative reaction to the French Revolution, the movement towards democracy, and the surge of nationalism. Alternate years. Prof. K. Kreider.

218* Europe in the Twentieth Century

3 credits. **(Cultural Heritage)** An examination of twentieth-century Europe, surveying both World Wars and their effect on modern society; emphasis on the rise of totalitarian ideologies, the plight of democracy, and the Depression. Spring semester. Prof. K. Kreider.

220* History of Soviet Union

3 credits. **(Foreign Cultures and International Studies)** A study of the Russian Revolution and the building of the new society, with emphasis on the Soviet Union's position in the modern world. Spring semester. Prof. K. Kreider.

221* History of Non-Violence

3 credits. **(Values and Choice)** An introduction to the thinking of those who proposed non-militarist, non-violent solutions to problems of their society. Readings from St. Francis, Tolstoy, Gandhi, Esquivel, Camara, Romero, Tutu, Thoreau, King, Dorothy Day, and the Berrigans are among those studied. Prof. K. Kreider.

227* History of Africa

3 credits. **(Foreign Cultures and International Studies)** A survey of African history from the beginning to modern times, including Africa's response to European imperialism and colonialism and the attainment of independence in the twentieth century. Prof. Vassady.

306 Recent History of the United States

3 credits. An intensive analysis of the vexing economic, political, social, and diplomatic forces responsible for shaping the American experience since 1900; conflicting interpretations emphasized. Prof. Winpenny.

307 American Economic History

3 credits. The growth and development of the American economy and its impact on human welfare. Emphasis is placed on the role of the entrepreneur, particular businesses, industrialization, government policy, and labor. Agrarian endeavor and slavery, and periodic recessions and depressions, together with the problems of unemployment and reindustrialization are considered. Prof. Winpenny.

310 American Ethnic History

3 credits. A study of immigration and ethnicity in the United States from colonial times to the present day. Prof. Vassady.

315 Renaissance and Reformation

3 credits. The Civilization of the Renaissance in Italy, with emphasis on Florence; Erasmus; and the Protestant Reformation of the sixteenth century. Prof. Poole.

316 The Age of Louis XIV

3 credits. Western Europe in the seventeenth century, with emphasis on the ascendancy of France, the Dutch Republic, and Stuart England. Prof. Poole.

319 History of Tsarist Russia

3 credits. The development of Russia from its medieval origins to the twentieth century, with emphasis on the development of Tsarist institutions, society, and political development. Fall semester. Prof. K. Kreider.

323 History of China

3 credits. A survey of Chinese history and culture, with emphasis on the modern period and the meeting of China and the West. Prof. Mumford.

324 History of Japan

3 credits. A survey of Japanese history and culture from the beginning to modern times, including Japan's response to the Western impact. Prof. Mumford.

328 Modern Africa

3 credits. Africa in the nineteenth and twentieth centuries, with emphasis on the age of imperialism and colonialism, as well as on African nationalism leading to independence. Prof. Vassady.

330-339 Studies in United States History

3 credits for each course. An analytical inquiry into special topics and periods: Economic History, Urban History, Colonial America, the American Revolution, the Age of Jackson, the Gilded Age, Technology and Society, and so forth. Staff.

340-349 Minorities in United States History

3 credits for each course. An incisive view of minorities in a society venerating majoritarian rule: for example, Afro-American history, immigration and ethnicity, Southern history, Indian history, and women in history. Staff.

371-379 Special Topics

3 credits. Special subjects chosen as a response to student and faculty interest. Staff.

390 Historical Methods and Historiography

3 credits. The student learns to do research in manuscript, primary, and secondary resources and to write a research paper. In addition, the student examines interpretations and philosophies of history and recent approaches and techniques to research. Prof. Mumford.

403 A History of United States Foreign Relations

3 credits. A study of the major personalities, events, and trends in United States foreign policy, with an emphasis on the influence exerted by domestic considerations. Staff.

406 Social and Intellectual History of the United States

3 credits. An examination of the major social and intellectual movements in the United States from colonial times to the present with an emphasis on reform and reformers. Prof. Winpenny.

411 Greek and Roman History

3 credits. Athens in the classical age from Solon to Alexander; Rome during the Republic, the Augustan Age and the early Empire. *By special arrangement.* Staff.

412 Medieval History

3 credits. Western Europe from the decline of the Roman Empire to the fifteenth century, with emphasis on the feudal system, the role of the Latin Church, and the rise of universities. *By special arrangement.* Staff.

480-489 Independent Study

Variable credit. Designed to offer an opportunity to use techniques of historical interpretation in specific problem areas. *Prerequisites: approval of the department chair and the Provost, permission of instructor.* Staff.

498-499 History Seminar

3 credits. A special course designed primarily for (but not limited to) senior majors in the Department. Research is an integral part of the learning experience. Staff.



Department of Mathematical Sciences

Professors Blaisdell, D. Koontz, Shubert (*Chair*)

Associate Professors J. Koontz, Morse

Assistant Professors Sanchis, Thorsen

Bachelor of Science

The program in mathematical sciences is designed to prepare the mathematics major for graduate study, for secondary teaching, or for employment in industry and government. Service courses provide students in the physical, managerial, social, and life sciences with the mathematical tools essential for their respective fields.

Some of these courses also satisfy the Core Program requirement and make the student aware of the cultural significance of mathematics and its contribution to the modern world. Instruction is designed to promote the development of proficiency with deductive reasoning, the ability to mathematically model "real" world phenomena, problem solving strategies, and computational skills.

The department offers five concentrations.

The *pure mathematics concentration* is designed to provide a foundation for successful graduate study in mathematics.

The *secondary education concentration* is required for secondary education certification. Students in this concentration are given a solid foundation in geometry, algebra, and statistics essential for effective teaching and analysis of the secondary school mathematics curriculum.

The *actuarial science concentration* provides training for those who wish to pursue careers in the actuarial profession. Actuaries use mathematical skills to define, analyze, and solve business and social problems pertaining to the financial impact of stochastic events. Actuaries are employed in fields such as insurance companies, federal and state governments, health organizations, and consulting firms.

The *statistics concentration* provides a firm foundation in this field of applied mathematics, enabling graduates to seek careers in government and industry, or to pursue graduate work leading to college teaching or employment as research statisticians.

The *computer science concentration* is for students who desire to be highly-skilled computer analysts with an unusually strong background in mathematics.

In addition to the major, the department offers a minor which requires Mathematics 121, 122, 151, 201, and nine credits of courses above 205.

All mathematics majors are required to take a minimum of 42 credits in mathematics courses, including Mathematics 121, 122, 151, 201, 222, 235, 351, and 421. Acceptable mathematics electives are those courses numbered above

222. In addition, Computer Science 121 (Mathematical Analysis Core) is required and should be taken as early as possible. In order to meet these requirements, students may elect one of the following five concentrations:

The pure mathematics concentration requires Mathematics 301, 321, 422, 425, three credits from acceptable mathematics electives; and Physics 101 (Natural World Core).

The secondary education concentration (required for secondary education certification) requires Mathematics 231, 301, 321, 341, three credits of mathematics electives; Education 205, 230, 305, 415, and 473; Physics 101 (Natural World Core); and three credits of computer science in addition to Computer Science 121.

The actuarial science concentration requires Mathematics 352; three courses from Mathematics 331, 362, 453, and 455; three credits from other acceptable Mathematics electives; Accounting 107 and 108; and Economics 100 and 102. Also required is evidence of successful completion of the course 100 examination of the Society of Actuaries by February of the junior year, and one additional actuarial examination by February of the senior year. The completion of additional examinations is strongly recommended. The following courses contain material related to actuarial examinations: Mathematics 121, 122, 201, 222, 331, 351, 352, 362, 453, and 455.

The statistics concentration requires Mathematics 352; three courses from Mathematics 231, 252, 331, and 453; and three credits from other acceptable Mathematics electives.

The computer science concentration requires Mathematics 231, 321, and 362; six credits from other acceptable Mathematics electives; Computer Science 122, 221, 222, and one other 300- or 400-level Computer Science course other than 321.

011 Intermediate Algebra

2 credits. An accelerated review of the fundamental algebraic and computational skills used in certain science courses and prerequisite to Mathematics 101, 105, 117, 151, and 205. *Credits are not applicable to the 125 required for graduation.* Fall semester. Staff.

101 Precalculus Mathematics

4 credits. A highly accelerated study of the function concept and of particular classes of functions: polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions. The objective of this course is to prepare students for Mathematics 121. *Prerequisite: Mathematics 011 (competency).* Fall semester. Staff.

105* Mathematics for Liberal Studies

3 credits. **(Mathematical Analysis)** An introduction to mathematical structures and applications designed to help students understand the historical and contemporary role of mathematics in human endeavors. Topics will be selected from a variety of areas such as logic, set theory, probability, statistics, graph theory, computer science, and matrix algebra. Topics may vary each semester. *Prerequisite: Mathematics 011 (Competency).* Staff.

117 Concepts of Calculus

4 credits. Designed to give students in the biological, social, and management sciences a firm working knowledge of calculus. The approach is intuitive, with emphasis on applications. Topics include differentiation, curve sketching, optimization, logarithmic and exponential functions, and integration. *Prerequisite: Mathematics 011 (competency).* *Note: Students who have received credit for Mathematics 121 may not enroll in this course.* Staff.

121* Calculus I

4 credits. **(Mathematical Analysis)** The basic concepts and techniques of the differential and integral calculus of elementary functions, including a study of limits and continuity. Applications are taken mostly from the physical sciences. *Prerequisite: Mathematics 101 (competency).* *Note: Students who have received credit for Mathematics 117 receive 2 credits for this course.* Staff.

122 Calculus II

4 credits. A continuation of Ma 121, involving the calculus of the trigonometric, exponential, logarithmic, and rational functions. Analytic geometry in the plane, parametric equations, polar coordinates, sequences and series are included, and an in-depth study of integration is completed. *Prerequisite: Mathematics 121.* Staff.

151* Probability and Statistics

3 credits. **(Mathematical Analysis)** The basic principles of probability, distributions, measures of location and dispersion, sample and population relationships, estimation, and hypothesis testing. The objective of this course is to introduce students to statistical thinking and methodology and their relation to everyday life. *Prerequisite: Mathematics 011 (competency).* Staff.

201 Linear Algebra

3 credits. A presentation of the basic concepts and techniques of linear algebra, including vectors, vector spaces, matrices, determinants, systems of linear equations, eigenvectors and linear transformations. Students will be expected to do mathematical proofs. *Prerequisite: Mathematics 121.* Prof. J. Koontz.

205 Mathematics for Elementary Teachers

3 credits. Provides a foundation in knowledge of mathematics essential for teaching in the elementary schools. Topics include number systems, geometry of measurement, coordinate geometry, three dimensional geometry, the metric system, functions, and various problem solving techniques. The course will address content preparation for elementary teachers as suggested by the National Council of Teachers of Mathematics. *Prerequisite: Completion of Mathematical Analysis core requirement.* Staff.

222 Calculus III

4 credits. A continuation of Math 122, completing the topics of the calculus sequence, including three-dimensional analytic geometry, vectors and vector valued functions, calculus of functions of several variables, and an introduction to differential equations. *Prerequisite: Mathematics 122.* Staff.

231 Discrete Structures (Computer Science 321)

3 credits. Topics in discrete mathematics as related to computer science, including sets, relations, graphs, trees, combinatorics, and recurrence. *Prerequisite: Mathematics 121 or 151.* Fall semester. Prof. Shubert.

235 Foundations of Abstract Mathematics

3 credits. Designed to help students make the transition from courses that emphasize problem solving in a concrete setting to those dealing with abstract objects and concepts. Special attention will be given to writing correct mathematical proofs. Topics include logic; sets, relations, and functions; mathematical induction; continuity; algebraic structures; and cardinality. *Prerequisite: Mathematics 122.* Spring semester, beginning in 1996. Staff.

252 Statistical Methods

3 credits. A continuation of material presented in Math 151. Statistical techniques are presented for solving a variety of problems arising in business, the social, physical and life sciences. Topics include simple and multiple regression, model building, analysis of count data, nonparamet-

ric statistics, analysis of variance, and survey sampling. *Prerequisite: Mathematics 151.* Prof. Blaisdell.

301 Abstract Algebra I

3 credits. A study of structures, such as groups, rings, integral domains, fields, polynomial rings, and ideals. Also included are topics from number theory, divisibility, congruence, and construction of number systems. *Prerequisite: Mathematics 201.* Fall semester, except 1995. Prof. Thorsen.

302 Abstract Algebra II

3 credits. A continuation of Abstract Algebra I involving a more in-depth study of the structures introduced in Ma 301 and abstract vector spaces. Emphasis will be on the development of skills in proof construction and interpretation of abstract concepts. *Prerequisite: Mathematics 301.* Spring semester, 1995 and 1997. *This course will be offered for the last time in 1997.* Prof. Thorsen.

321 Differential Equations

3 credits. A study of analytical and numerical methods for solving ordinary differential equations. Series and Laplace transformation methods are studied, including techniques for solving linear systems of differential equations. *Prerequisites: Mathematics 201, 222.* Spring semester. Prof. D. Koontz.

331 Operations Research

3 credits. A study of mathematical techniques and models used to solve problems from business, management, and various other areas. Topics include linear programming, integer programming, dynamic programming, queuing theory, decision analysis, network analysis, and simulations. *This course is specifically geared towards the student's preparation for the Course 130 Actuarial Examination.* *Prerequisites: Mathematics 151, 201.* Fall semester, even-numbered years. Prof. Shubert.

341 Modern Geometry

3 credits. The concept of geometry as a logical system based upon postulates and undefined elements, along with an appreciation of the historical evolution of geometries. Topics include incidence geometries, planes and space, congruence, inequalities, parallel postulates, parallel projections, similarities, circles, and additional theorems. *Prerequisite: Mathematics 121 or permission of the instructor.* Fall semester, odd-numbered years. Prof. J. Koontz.

351 Mathematical Statistics I

3 credits. A comprehensive development of the theory of statistics through a study of probability and distribution theory, including the uniform, geometric, binomial, hypergeometric, negative binomial, multinomial, Poisson, exponential, gamma, chi-square, Student's *t*, Snedecor's *F*, and normal distributions. *Prerequisites: Mathematics 151, 222.* Fall semester. Prof. Blaisdell.

352 Mathematical Statistics II

3 credits. A continuation of MA 351. A study of principles of statistical inference with an emphasis on estimation and hypothesis testing. *Prerequisites: Mathematics 201, 351.* Spring semester. Prof. Blaisdell.

362 Numerical Analysis

3 credits. A study of iterative methods suitable for computer programming which are useful in solving a variety of mathematical problems arising in the sciences, including actuarial science. Topics include solutions of equations in one variable, numerical integration, polynomial approximation, solution of linear systems, and numerical methods in matrix algebra. *Prerequisites: Mathematics 201, 222; Computer Science 121.* Fall semester, odd-numbered years. Prof. Thorsen.

370-379 Special Topics in Mathematics

Variable Credit. A study in topics of special interest to advanced undergraduate mathematics students. *Prerequisite: permission of the department chair.* Staff.

421 Real Analysis I

3 credits. A rigorous study of the fundamental concepts of analysis, including such topics as sets and functions, sequences of real numbers, limits and metric spaces, continuity, and differentiation. *Prerequisites: Mathematics 201, 222.* Fall semester, beginning 1995. Prof. Sanchis.

422 Real Analysis II

3 credits. A continuation of Math 421, including such topics as integration, Taylor series, sequences of functions, and series of functions. *Prerequisite: Mathematics 421.* Spring semester, even-numbered years. Prof. Sanchis.

425 Complex Variables

3 credits. A study of complex numbers, analytic functions, Cauchy's Theorem, the maximum modules theorem, harmonic functions, power series, Laurent's series, calculation of residues, evaluation of real integrals, and conformal mappings. *Prerequisite: Mathematics 235.* Spring semester, odd-numbered years, beginning 1997. Prof. Thorsen.

453 Time Series Analysis

3 credits. Applied statistical methods. A study of statistical methods including analysis of variance, regression analysis, and time series analysis. *Note: The course is specifically geared toward the student's preparation for Course 120 Actuarial Examination.* *Corequisite: Mathematics 352.* Spring semester, odd-numbered years. Prof. Sanchis.

455 Mathematics of Compound Interest

3 credits. Topics include: measurement of interest, including accumulated and present value factors; annuities certain; yield rates; amortization schedules and sinking funds; and bonds and related securities. *Note: The course is specifically geared toward the student's preparation for Course 140 Actuarial Examination.* *Prerequisites: Mathematics 151 and 117 or 121.* Spring semester, even-numbered years. Prof. Sanchis.

480-489 Independent Study

Variable credit. Staff.

Education 305 Practicum in Secondary Education

4 credits. A study of the instructional methodology of mathematics under the guidance of a clinical professor in mathematics. Field experience required. *Prerequisite: Education 230.* Fall semester, even-numbered years. Prof. J. Koontz.

Department of Modern Languages

Associate Professors Daiga, Goodling, Trachte (*Chair*)
Assistant Professor Barnada

Bachelor of Arts

The study of a modern foreign language brings together practical training in language skills (understanding, speaking, reading, and writing) with an understanding of the sociology, history and literature of the culture. The pragmatic virtues of a usable skill are joined with the humanistic values of liberal education.

The Department of Modern Languages offers programs of study which reflect its desire to encourage both mastery of one or more foreign languages and an overall appreciation of the cultural contexts in which they occur. The department serves the core program, bachelor of arts degree candidates majoring in languages, students whose degree programs require studies in languages, and students who, for professional or personal reasons, wish to broaden their cultural background.

The Department offers *majors in French, German, and Spanish*. The requirements of a major may be met by

completing 30 credit hours in one language above 112. Language majors are required to participate in the Brethren Colleges Abroad program. Other students who have completed 112 or above are also encouraged to participate in the Brethren Colleges Abroad program.

Department majors must complete the following courses: Modern Languages 211, 212, 311, 323, and 495. If offered, a 312 or a 371 course may be substituted for 323. At least two of the first four courses above must be completed on the Elizabethtown College campus with members of the department faculty. In addition, the senior research project (495) must be written on campus under departmental faculty supervision. Majors must participate in the BCA program for one year and the courses taken must include advanced conversation and composition, phonetics, French/German/Spanish history, and History of (French/German/Spanish) Literature for a minimum of 15 credits in the major. After completing the required course work, majors must take the oral proficiency interview and receive a minimum proficiency rating of Advanced/Level 2.

The option of a *modern language minor* is also available. The requirements of a minor are: Modern Language 211, 212, 311, and 323. If offered, a 312 or a 371 course may be substituted for 323. At least two of the first four courses above must be completed on the Elizabethtown College campus. The remaining two may be completed on campus or in the Brethren Colleges Abroad program. After completing the required course work, students must take the oral proficiency interview and receive a minimum proficiency rating of Intermediate High/Level 1+.

International students with fluency in either French, German, or Spanish may pursue a major or minor under certain circumstances. First, they must place into the 300 level at Elizabethtown College. Second, if they participate in the BCA program, they must study only at the university level and must enroll in advanced literature or linguistics courses. Third, successful completion of the major or minor will be contingent upon the rating of Superior on the oral proficiency interview.

A placement test is administered free of charge during summer orientation for freshmen. In addition, it is offered during the first week of classes in the fall. It may be taken at any other time during the academic year for the general college fee of \$50. All students with two full years or more of language preparation must take the placement test before registering in language courses for academic credit.

111 Fundamentals of Language and Culture I (French, German, Spanish)

4 credits. Basic elements of structure and the phonetic system in culturally authentic contexts. The development of communicative competence in five skill areas: speaking, listening, reading, writing, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks.

112* Fundamentals of Language and Culture II (French, German, Spanish)

4 credits. **(Foreign Cultures and International Studies)** Expansion of basic elements of structure and the phonetic system in culturally authentic contexts. Additional development of communicative competency in five skill areas: listening, speaking, writing, reading, and socio-cultural awareness. Audio and videotapes supplement proficiency-oriented textbooks. *Prerequisite: Modern Language 111 or placement by examination.*

211* Communication Through Language and Culture I (French, German, Spanish)

3 credits. **(Foreign Cultures and International Studies)** Emphasizes functional proficiency. A functional-notational syllabus expands use of linguistic tasks such as asking questions, stating facts, describing, narrating, and expressing feelings. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 112 or placement by examination.*

212* Communication Through Language and Culture II (French, German, Spanish)

3 credits. **(Foreign Cultures and International Studies)** Expanded use of linguistic functions. Introduction and development of more advanced tasks such as sustaining opinions, explaining, comparing, and hypothesizing. Use of authentic cultural materials and contexts heightens socio-cultural awareness. Audio and videotapes supplement texts and written materials. *Prerequisite: Modern Language 211 or placement by examination.*

311 Making of Modern Society (French, German, Spanish)

3 credits. Analysis of important contemporary cultural phenomena and issues which have shaped and continue to shape the modern nation. Readings are taken from literary, sociological and political sources. Films, slides, and audio and videotapes supplement written materials. *Prerequisite: Modern Language 212 or permission of instructor.*

312 Languages for the Professions (French, Spanish)

A. Commercial French

3 credits. Practical training in French business practices and a knowledge of the essential vocabulary and style specific to business communication. Of equal importance is the development of a critical perspective on the structure and basic workings of French business and industry within the context of the society as a whole. *Prerequisite: French 211 or permission of instructor.*

B. Spanish for the Health Professions

3 credits. Practical and authentic Spanish relevant to the medical and social services. A study of cultural attitudes, behaviors, and beliefs regarding health care issues that may influence the delivery of service to the Hispanic client. *Prerequisite: Spanish 211 or permission of instructor.*

318 Foreign Internship (French, German, Spanish)

Variable credit. Internships are considered as electives for the minor and must be preceded by at least one semester of study abroad in the target country. Internships are awarded variable credit depending on the nature and length of the placement. Only students with an oral proficiency rating of Advanced/Level 2 and a B+ average in their language course work are eligible.

323 Introduction to Literature (French, German, Spanish)

3 credits. Development of students' ability to read thoroughly, analyze, and appreciate literature. Selected readings representative of different literary genres. *Prerequisite: Modern Language 212 or permission of instructor.*

371-379 Special Topics (French, German, Spanish, Russian)

3 credits. Topics of special interest not otherwise covered in the curriculum. Topics depend upon student interest and faculty availability. *Prerequisite: Modern Language 212 or permission of instructor.*

481-489 Independent Readings (French, German, Spanish)

3 credits. For senior language majors. Independent projects in some area of language or literature.

495 Senior Research Project

3 credits. For senior language majors. Involves researching a literary, linguistics, or cultural topic and the writing of a major paper in the target language. This capstone experience will be closely supervised by department faculty.

English As A Second Language

ESL 111 Intermediate English as a Second Language

2 credits. Focuses on the improvement of speech, listening, reading and writing skills, emphasizing the descriptive and narrative paragraph. Audio and videotapes supplement the textbook and develop communicative competency. *Prerequisite: Placement by examination and TOEFL score.* *NOTE: Credits do not count toward graduation requirements.*

ESL 112* Advanced English as a Second Language and American Culture

3 credits. **(Foreign Cultures and International Studies)** A continuation of ESL 111, expanding the student's functional proficiency through advanced grammar and essay development, audio/video materials to improve listening comprehension, and extended oral discourse. Reading selections increase reading comprehension and awareness and understanding of American culture. *Prerequisite: ESL 111 or placement by examination and TOEFL score.*

Department of Occupational Therapy

Associate Professor Jones

Instructor Clark

Clinical Lecturers Bentzel, Farley

Fieldwork Coordinator Salvadia

Bachelor of Science

Professional Accreditation: The Occupational Therapy program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE). The department has been accredited since 1976.

Occupational Therapy is a health profession that helps to improve the well being and functions of people with developmental delay and physical and psychological dysfunction. The student in occupational therapy undertakes a program that integrates the humanities and the behavioral and physical sciences with professional study.

Emphasis on the importance of both the humanities and the sciences in preparing for professional life is further manifest in the philosophical approaches which shape the department. The bases of the program are a comprehensive knowledge about human development, an awareness of the significance of socio-cultural environments, and an understanding of the dynamics of human relations.

The primary objective is to prepare the student as a generalist practitioner who is qualified for employment in hospitals, community agencies, schools, rehabilitation centers, extended-care facilities and related human services agencies. With this foundation, the beginning therapist can progress to specialized areas of clinical practice as well as research, administration, and academia.

Occupational therapy majors must take Occupational Therapy 115, 116, 119, 120, 218, 219, 223, 223L, 224, 224L, 303, 305, 307, 308, 316, 320, 398, 402, 405, 407, 409, 410, 412, 421, 479; Chemistry 101; Biology 111, 201, 202, 202L; Psychology 105; and Mathematics 151 and 252. Due to course sequencing and competencies, Biology 201, 202, and 202L must be taken at Elizabethtown College.

Academic and Fieldwork Education

The occupational therapy program comprises a four-year course of classroom study and at least six months of fieldwork education. Students are responsible for their transportation and travel costs to and from assigned clerkship and fieldwork centers. Such assignments begin in the junior year and continue throughout the program. Level-II fieldwork assignments are made to provide students with the best experience possible. Since Level-II fieldwork centers are often at a distance from the College and the student's home, there is no guarantee that a student can live at home during these experiences. Students should expect to pay room and board expenses during the Level-II fieldwork experience at the affiliated hospital or clinic. They are also responsible for other related fieldwork expenses such as physical examinations, vaccinations, and child abuse/police clearance when required by the facility.

The student may select either of the following options with faculty approval:

First Option: The student may complete three years of academic work followed by three months of Level-II fieldwork experience during the summer between the junior and senior years. The student completes the senior academic year followed by three months of Level-II fieldwork during the summer.

Second Option: The student may complete four years of academic work followed by six months of Level-II fieldwork experience.

Specialty Fieldwork

After completing the required six months of Level-II fieldwork, the student may elect to complete specialty Level-II fieldwork. The clinical experience may be pursued in areas such as pediatrics, mental retardation, gerontology, home health, hand rehabilitation, sensory integration, school system, advanced psychosocial or physical rehabilitation, research, administration and education, and could be pursued abroad in countries which are members of the World Federation of Occupational Therapy (WFOT).

Related Expenses

Additional expenses for the occupational therapy student normally include transportation to fieldwork sites, room and board during Level II fieldwork, insurance, registration examination fee, and similar charges. Although not required, all students are urged to become members of the American Occupational Therapy Association and the Pennsylvania Occupational Therapy Association. There are reduced rates for students.

National Certification Examination

Upon being awarded the bachelor's degree in occupa-

tional therapy and successful completion of Level-II fieldwork, the student is eligible to sit for the national certification examination, held twice a year, in July and January. The examination is conducted by the American Occupational Therapy Certification Board (AOTCB) which is responsible for awarding certification and the designation Occupational Therapist Registered (OTR). Most states require licensure to practice; state licenses, however, are usually based on the results of the AOTCB Certification Examination.

Admission/Retention Requirements for the Department

1. Prior To Admission Into The Department:

- a. The student must submit an application with all supporting documentation to the director of admissions before December 15 of the year prior to the anticipated date of matriculation. Students are admitted into the program in the fall semester only. Transfers are permitted at the sophomore level only, on a space available basis.
- b. The student must have an interview with a member of the Occupational Therapy faculty and/or a practicing clinician in order to determine eligibility.
- c. Freshman Occupational Therapy majors are selected by the Occupational Therapy faculty. The selection process includes consideration of rank in high school class, SAT scores, TSWE scores, high school science grades, interview, and knowledge of occupational therapy.
- d. The names of freshmen Occupational Therapy students selected for the next academic year are submitted to the director of admissions.
- e. The Department of Occupational Therapy requires that the student submit an updated medical history on forms provided by Elizabethtown College with the application for admission. The examination may be completed by the student's family physician or by the College physician at cost to the student. It is also required that the student sign a waiver to release information in the medical history to the Department of Occupational Therapy. Due to the clinical component of the program, the department reserves the right to require that the student submit additional medical histories or obtain medical treatment should a physical or emotional problem arise which the department feels may jeopardize the student's participation in the program.

2. Evaluation After Admission Into The Department:

Admission into the Department of Occupational Therapy does not imply that a student is guaranteed completion of the entire course of study nor that the student is eligible to sit for the certification examination. The student is reviewed by a faculty evaluation committee at the conclusion of each academic year. If the committee believes that a student is not suitable academically or professionally for the area of study, the student is counseled into other areas of endeavor. In order to remain in the department, the student must have at least a 2.5

average in all courses required for the major (both occupational therapy and related requirements) at the end of the sophomore year.

3. Methods of Exit from the Major and the Program:

- a. For the major only: Complete all requirements of the major with the exception of the Level II Fieldwork education courses. Must have a minimum grade point average of 2.0 in major requirements.
- b. For the program and permission to sit for the American Occupational Therapy Certification Board (AOTCB) Examination:
 - (1) Complete all requirements of the major (courses in the major as well as those designated by the major in other departments) and have a minimum grade point average of 2.5.
 - (2) Complete the required Level II Fieldwork education courses, Occupational Therapy 398 and 471, with a P grade.

115 Basic Concepts in Occupation

2 credits. An introduction to occupation. Explores those concepts which are necessary to understand the occupational nature of humans. An historical perspective of the importance of work, play, and leisure within the contexts of culture and family; the importance of purposeful and creative activity along the lifespan continuum; the cultural and developmental use of occupation to foster normal development and the effect of dysfunction and death on occupational behavior. *Permission of the instructor for nonmajors is required.* Fall semester.

116 Occupation as Therapy

2 credits. An introduction to the history and philosophy of the use of occupation to treat emotional and physical dysfunction, building on the occupational nature of humans. Includes movements leading to the establishment of the profession of occupational therapy, as well as the history and philosophical base of the profession from 1917 to the present. Also includes understanding of the basic professional theories and models. Students will become familiar with other therapies utilizing specialized occupations and activities. *Permission of the instructor for non-majors is required.* Spring semester.

119 Activities and Media I

2 credits. Theory and application of activities and media used in occupational therapy treatment. Instruction in the basic skills of selected activities, fine motor and product oriented as well as games and gross motor activities. Opportunities for presentations and teaching. *Permission of the instructor for non-majors is required.* Fall semester.

120 Activities and Media II

2 credits. Analysis of activities and media used in occupational therapy treatment. Instruction in additional skills of selected activities. Emphasis on analysis, adaptation and application to treatment. *Permission of instructor for non-majors is required.* Spring semester.

218 Kinesiology I

2 credits. Application of the principles of functional anatomy with emphasis on normal and abnormal movement. Measurement techniques for range of motion and muscle testing are presented. Concepts are integrated in lab experiences. *Prerequisites: Biology 201; Occupational Therapy majors only.* Spring semester.

219 Expressive Activities

2 credits. An overview of activities used to facilitate the expression of emotion in a therapeutic setting. Some of the media to be included are puppetry, painting, and ceramics. *Occupational Therapy majors only.* Fall semester.

223 Life Skills I: Birth through Adolescence

3 credits. An examination of normal human development along the birth through adolescence segment of the developmental continuum.

Emphasis is on development and occupational behaviors in the areas of biophysical, cognitive, and psychosocial domains. *Corequisite: Occupational Therapy 223L. Occupational Therapy majors only.* Fall semester.

223L Life Skills I: Laboratory

2 credits. Provides opportunity for student to engage in analysis of normal patterns of performance. Initiates practice activities in the occupational therapy process: observation, standardized assessments, evaluation and reporting, as well as analysis of activities of daily living and identification of daily living skills, as these apply to the birth-through-adolescence age groups. *Corequisite: Occupational Therapy 223. Occupational Therapy majors only.* Fall semester.

224 Life Skills II: Young Adult Through Old Age

3 credits. An examination of normal human development along the young adult-through-old age segment of the developmental continuum. Emphasis is on occupational behaviors in the areas of self-care, work, leisure, marriage and parenting, social, retirement and disengagement and the effect of the aging process on these behaviors. Analysis of normal patterns of performance through lecture and laboratory discussion sessions. *Prerequisites: Occupational Therapy 223 and 223L. Occupational Therapy majors only.* Spring semester.

224L Life Skills II: Group Dynamics Laboratory

2 credits. Laboratory experience in the dynamics and stages of groups, with particular emphasis on activity focused groups. *Corequisite: Occupational Therapy 224. Occupational Therapy majors only.* Spring semester.

303 Pediatric Intervention

4 credits. The course provides a comprehensive study of the role of occupational therapy in pediatrics. Theoretical principles and therapeutic techniques relevant to the evaluation and treatment of physical, psychosocial, occupational and environmental needs of infants and children will be presented in a developmental framework. Case studies and professional reporting are coordinated with lecture/laboratory (2 credits) and seminar/Level-I Fieldwork (2 credits). *Corequisite: Occupational Therapy 305. Occupational Therapy majors only.* Fall semester.

305 Pediatric Conditions

1 credit. Medical lectures relative to the etiology, diagnosis, management and prognosis of major pediatric conditions. *Permission of the instructor for non-majors is required.* Fall semester.

307 Neurobehavioral Science: Neurology

3 credits. An overview of basic neuroanatomy and neurophysiology with emphasis on the functional neuronal systems (motor, sensory, limbic), clinical conditions, and the therapeutic treatment. *Prerequisites: Biology 201, 202, 202L. Permission of the instructor for non-majors is required.* Fall semester.

308 Psychosocial Pathology

2 credits. Major psychiatric disorders, medication, treatment techniques and team responsibilities and relevant philosophical issues. Community mental health is included. *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L.. Occupational Therapy majors only.* Spring semester.

316 Psychosocial Rehabilitation

4 credits. An examination and application of major psychiatric theories relevant to occupational therapy. Various evaluation tools, treatment plan design, ethical concerns. Case studies and professional reporting are coordinated with lecture/laboratory (2 credits) and seminar/Level-I Fieldwork (2 credits). *Prerequisites: Psychology 105, Occupational Therapy 223, 224 and 224L. Occupational Therapy majors only.* Spring semester.

320 Health Care Systems

3 credits. A study of the development of health care systems in the United States. Includes administrative structure, payment systems, quality assurance, regulations and legislative issues. *Permission of the instructor for non-majors is required.* Spring semester.

325 Sign Language

2 credits. Basic competency in the use and comprehension of American sign language and to acquaint the learner with the cultural uniqueness of the deaf community. *Permission of the instructor required for majors and non-majors.* Fall semester. *NOTE: Occupational Therapy students may not count these credits toward graduation requirements.*

371-379 Special Topics

A series of variable-credit courses with topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Permission of the instructor required.*

398 Level II Fieldwork—Psychosocial Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of psychosocial rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum passing scores on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Occupational Therapy majors only.* Summer term.

402 Geriatric Occupational Therapy

3 credits. Overview of the role of occupational therapy with the elderly. Emphasizes understanding of the characteristics and needs of older persons, and the application of generic as well as geriatric occupational therapy to this population. Service management issues such as health care legislation and reimbursement are included. *Prerequisites: Occupational Therapy 224, 316, 405. Occupational Therapy majors only.* Spring semester.

405 Physical Rehabilitation

4 credits. Overview of evaluations and treatment intervention strategies, including the neurodevelopmental, biomechanical, and rehabilitative approaches used to enhance the function of individuals with major physical disabilities. Case studies and professional reporting are coordinated with lecture/laboratory (2 credits) and seminar/Level-I Fieldwork (2 credits). *Prerequisite: Occupational Therapy 218; Corequisite: Occupational Therapy 407. Occupational Therapy majors only.* Fall semester.

407 Physical Pathology

2 credits. Medical lectures relative to the etiology, prognosis and treatment of the major conditions resulting in physical disability. *Permission of the instructor for non-majors is required.* Fall semester.

409 Methods of Research

3 credits. The scientific method as the basis for research. Included are experimental designs and naturalistic inquiry methods. Students plan scholarly research within an area of professional interest, using evaluation and guidelines for conducting research. Other topics include literature critique, grant writing, publishing and data analysis. *Prerequisites: Mathematics 151, 252. Occupational Therapy majors only.* Fall semester.

410 Administration, Management and Supervision

3 credits. An introduction to the administration and supervisory functions of managing an occupational therapy department. Topics covered include: quality assurance, personnel management, budgeting, documentation, program planning, evaluation, marketing, and recruitment. *Occupational Therapy majors only.* Spring semester.

414 Advanced Senior Practicum Research

Variable credit. Taken in conjunction with Occupational Therapy 409, Methods of Research; for students who desire to participate in implementing a data based research project to be conducted either on campus or at a nearby clinical facility.

420 Sensory Integration

1 credit. Continued study of the sensory integration of the central nervous system, with exposure to standardized evaluation procedures, sensory integrative disorders and remediation techniques. Emphasis on theoretical considerations within a developmental framework. Lecture and laboratory. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring semester.

421 Splinting and Rehabilitation of the Hand

2 credits. Functional anatomy of the hand incorporated in basic splinting and rehabilitation principles. Emphasis on evaluation and fabrication techniques with application to specific disabilities. *Prerequisites: Biology 201 and Occupational Therapy 405. Occupational Therapy majors only.* Spring semester.

424 Occupational Therapy in School Systems

1 credit. Examination of the school system as a setting for occupational therapy services. Topics will include federal legislation, multi-disciplinary collaboration, roles and functions of occupational therapists, and characteristics which differentiate the school system from other areas of OT practice. *Occupational Therapy majors only (cannot be used for graduation requirements).* Graded P/NP. Spring Semester.

471 Level II Fieldwork—Physical Rehabilitation

No credit. Twelve weeks of Level II Fieldwork experience in the area of physical rehabilitation. In order to be eligible to sit for the national certification examination, the student must achieve at least the minimum passing scores on the AOTA Fieldwork Evaluation. Further information on Level II Fieldwork can be found in the department student handbook and the Level II Fieldwork Student Manual. *Prerequisites: All academic course work, Occupational Therapy 398, and CPR certification if required by the facility. Occupational Therapy majors only.* Summer or fall semester.

479 Level II Fieldwork – Specialty

No credit. Variable length of Level II Fieldwork experience in area of student's interest. Arranged on an availability basis. *Prerequisites: Occupational Therapy 398 and 471. Occupational Therapy majors only.* Fall semester.

481-488 Independent Studies

Variable credit. Purpose of this course is to offer advanced students opportunity to study specialized areas not otherwise included in the curriculum.

Department of Philosophy

Professor Spiegler

Associate Professor Matteo (*Chair*)

Assistant Professor Silberstein

Courses in the Department of Philosophy are designed to deal with the fundamental questions which continue to puzzle us in spite of our learning. The program promotes inquiry into such perennial philosophical questions as to the nature of justice, happiness, knowledge, truth, and freedom. The goal of the program is to produce awareness of the answers that have been proposed in response to these questions, and to provide the skills for an analysis of the assumptions and values which underlie different intellectual disciplines. The study of philosophy encourages the student to develop the ability to analyze problems, understand basic issues, and develop possible solutions. It challenges the student to reflect critically upon the problems involving values, and to examine problems that cut across the boundaries of science, art, politics, and religion. Philosophy examines alternative world views and forms of knowledge, and helps the student to develop an awareness of intellectual history. Philosophy has always been central to the liberal education.

A major in philosophy is an excellent preparation for those going on to graduate school and for those planning professional vocations. It is an especially good background for the law, the ministry, computer science, and the natural sciences. It will also prove valuable in any occupation which demands clear thinking and the ability to understand the points of view of other people. The program is designed to give the student maximum opportunity to get a broad, liberal education and to develop special skills along the way.

A major in philosophy requires nine courses in Philosophy and a 3-hour Senior Thesis. A 100-level course or a 200-level course is recommended as preparation for a 200- or 300-level course. Required courses are: Philosophy 105, 115, 180, 201, 240, 310, and 490; two courses from 302, 313, and 320; a three credit departmental elective, and a Modern Language of 112 or above.

A minor in philosophy requires: Philosophy 105, 110 or 180, 115, 201, 240 or 310, and three credits from 240, 302, 310, 313, or 320.

105* Introduction to Philosophy

3 credits. (**Cultural Heritage**) An introduction to the central problems of philosophy by exploring some of the classic responses to such issues as: in what sense can we know there is human freedom, what is the status of knowing, what is the foundation of values, what is the nature of justice, and social, political organization. Prof. Silberstein.

110* Logic and Critical Thinking

3 credits. (**Power of Language**) A study of the techniques of analyzing texts, arguments, and language. The process of inquiry into evidence and truth. The nature of inference from premises to conclusion, rules for deductive and inductive process; informal inferences and fallacies, and theory of definition. *Prerequisite: Mathematics 011 (competency).* *NOTE: A student who has received credit for English 150 to satisfy the Power of Language requirement may not enroll in Philosophy 110. Philosophy 110 is available only to those students with English 150 placement level.* Prof. Silberstein.

115* Ethics

3 credits. (**Values and Choice**) A study of the nature, origin, and development of ethical theories from a historical perspective and their relevance to some significant problems in contemporary life. Special attention is given to the exploration of enduring moral concerns, such as moral relativism, the place of reason in ethics, egoism and altruism, and the nature of moral responsibility. Prof. Matteo.

180* Symbolic Logic

3 credits. (**Mathematical Analysis**) Studies the methods of such formal rational procedures as syllogistic, propositional, quantificational, and modal logic, and the informal procedures of inductive reasoning, meaning and definitions, and informal topics including fallacies. *Prerequisite: Mathematics 011 competency.* Prof. Silberstein.

201* Ancient and Medieval Philosophy

3 credits. (**Cultural Heritage**) An introduction to the beginning of Western philosophy: the pre-Socratic philosophers, the thought of Parmenides, Socrates, Plato, and Aristotle, and the medieval thinkers such as Augustine and Aquinas. Prof. Matteo.

212 Aesthetics

3 credits. An inquiry into the nature of art and aesthetic experience and of the meaning of literature and the arts in one's own life and the life of a culture. Staff.

240 Modern Philosophy

3 credits. A study of enduring issues in the writings of the 17th and 18th

century rationalists: Descartes, Spinoza, Leibnitz; and empiricists: Locke, Berkeley, Hume, and Kant. Prof. Matteo.

255 Advanced Ethics

3 credits. A constantly changing inquiry into the values, norms, and thought forms used in the areas of bioethics, environmental ethics, business ethics, and the ethics of conflict and social change. Staff.

302 Philosophy in the 19th Century

3 credits. The foundation of Kant's critical philosophy and the philosophical tradition of German Idealism, with emphasis on Hegel's dialectical reasoning. A study of the leading thinkers of the Nineteenth Century, such as Hegel, Feuerbach, Marx, Kierkegaard, Freud, and Nietzsche. Prof. Matteo.

310 Contemporary Philosophy

3 credits. A study of several of the outstanding thinkers in Western culture in the 20th Century. The Anglo-American analytical and continental phenomenological and existential traditions, along with American pragmatism and process thought. Staff.

313 Philosophy of Science

3 credits. An examination of the scientific method and models as they have developed historically. And an analysis of the impact of science upon the modern world and its limitations as a method into the exploration of value theories and social change. Prof. Silberstein.

320 Philosophy of Religion

3 credits. A study of man's rational efforts to establish the validity of the religious perspective with particular emphasis on theism, the proofs of the existence of God, religious experience, and the nature of evil. Staff.

371-79 Special Topics in Philosophy

3 credits. A constantly changing specialized study within the field of philosophy featuring such areas as existentialism, philosophy of language, the mind, epistemology, and other topical interests. Staff.

480-89 Independent Study

Variable credit.

490 Senior Thesis

3 credits. An individualized study project involving research of a topic and the preparation of a major paper. The paper is presented orally to the Philosophy Department staff and interested persons. This is normally done during the fall or spring term of the senior year. Staff.

Department of Physical Education and Health

Associate Professors Ober (*Chair and Director of Athletics*), Kauffman

Assistant Professor Whitmore

Staff: T. Hill (*Assistant Director of Athletics*), Roderick, Schlosser

The Department of Physical Education and Health provides students with opportunities to develop interests and skills in sports and recreational activities that are physically beneficial and fun to them during college and in later life. Students also develop social and moral standards, such as sportsmanship, teamwork, tolerance, and other character traits which come from properly conducted play.

All students are required to take three semester hours of physical well being courses, of which at least two must be activity courses. They may be satisfied by any of the courses offered in the Department of Physical Education, except PE 285. No more than five (5) credits of physical well being courses may be counted toward the graduation requirement.

105* Swimming

1 credit. (**Physical Well Being**) Instruction in the basic strokes, survival swimming, and water safety. Graded Pass/No Pass.

110 Physical Education for the Elementary School Child

2 credits. A study of the physical growth of children from ages 4-12, with consideration of games and activities appropriate to the physical development of the child in the elementary grades.

110L* Physical Education for the Elementary School Child Laboratory

1 credit. (**Physical Well Being**) *Note: Students must enroll in both the lecture portion of this course (Physical Education 110) and the laboratory portion (Physical Education 110L*) to receive credit. Physical Education 110 will count as two credits of free electives; Physical Education 110L* will count as a one credit Physical Well Being activity course.*

115* Physical Fitness and Wellness

1 credit. (**Physical Well Being**) Instruction in cardiovascular-type activities, strength, flexibility, weight control, nutrition, myths, physical activity, injury prevention and rehabilitation, safety, fitness equipment, stress, relaxation, games, exercises, and the consumer-personalizing fitness, aerobic exercises.

119* SCUBA

1 credit. (**Physical Well Being**) A total introduction to the use of SCUBA equipment, safety; includes work in the pool and classroom. Includes deep water dive certification by the Professional Association of Diving Instructors (PADI).

120* Aerobics

1 credit. (**Physical Well Being**) Inspiration - perspiration: a diversified fitness program that will give a complete workout. Graded Pass/No Pass.

125* Tennis

1 credit. (**Physical Well Being**) Rules, playing techniques, and skill development.

130* Bicycling

1 credit. (**Physical Well Being**) The purpose of this course is to develop a better awareness of safety, recreation, and fitness while biking. *Equipment needed: a bicycle with five or more gears, a bicycle flag, and a helmet.* Graded Pass/No Pass.

140* Bowling

1 credit. (**Physical Well Being**) Rules, playing techniques, and skill development. Graded Pass/No Pass.

145* Field Hockey/Volleyball

1 credit. (**Physical Well Being**) Rules, playing techniques, and skill development.

146* Racquetball

1 credit. (**Physical Well Being**) Rules, playing techniques, and skill development.

150* Volleyball

1 credit. (**Physical Well Being**) Rules, playing techniques, and skill development.

161-163* Adapted Physical Education

1 credit. (**Physical Well Being**) Individual activity or collective exercise adapted to needs and abilities of the student. Graded Pass/No Pass.

165* Golf/Badminton

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

175* Archery/Badminton

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

181-183* Self-directed Physical Education Activity

1 credit. **(Physical Well Being)** For the student who has extenuating circumstances which prohibits the person from meeting regularly scheduled physical education classes. Graded Pass/No Pass.

185* Basketball

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

190* Horsemanship

1 credit. **(Physical Well Being)** Basic riding positions, balance, equine safety. Discuss equine behavior, care, tack, styles, and management. Graded Pass/No Pass.

194* Skiing

1 credit. **(Physical Well Being)** Graded Pass/No Pass.

195* Soccer

1 credit. **(Physical Well Being)** Rules, playing techniques, and skill development.

218* Water Safety Instruction

1 credit. **(Physical Well Being)** This course follows American Red Cross certification procedures. Graded Pass/No Pass.

Department of Physics

Including Earth Science and Engineering

Professor Ranck

Associate Professors Leap, Stuckey, Thompson

Lecturer Ferruzza (*Chair*)

Bachelor of Arts; Bachelor of Science

Programs in the Department of Physics are designed to convey an appreciation and understanding of physical and natural systems and to prepare students for professional careers in science and technical fields. In accord with the philosophy that both majors and nonmajors should be broadly exposed to studies of natural phenomena, the department offers a variety of formal courses and informal learning experiences, all intended to cultivate an ability for continuing self-education. Analysis, problem solving, and hands-on experience are emphasized at all instructional levels.

Students majoring in the department commonly go on to graduate school or to careers in physics, engineering, computer technology, or education.

Programs in Physics

Programs in physics lead to the B.S. degree. The **physics**

major is preparation either for graduate school or for the technical job market. The **engineering physics major** is a practical program designed to lead to a technical career in industry. The **chemical physics major** combines study in the fields of physics and chemistry. The **secondary education major in physics** and the **general science education major** (with a concentration in physics), offered in conjunction with the education department, lead to Pennsylvania teacher certification at the secondary level.

Programs in Engineering

Engineering majors in the 3/2 program study for three years at Elizabethtown College and two years at The Pennsylvania State University. Upon completion of the program, the B.A. degree is awarded by Elizabethtown College and the B.S. degree by The Pennsylvania State University. Engineering students in the 3/2 program who maintain a 3.0 cumulative grade point average at Elizabethtown College are guaranteed admission to the College of Engineering at The Pennsylvania State University.

The Elizabethtown College four-year engineering programs, which lead to the B.S. degree, are preparation for technical careers in industry. The **computer engineering major** combines studies of engineering and computer technology, including both hardware and software. The **industrial engineering major** combines engineering physics with business administration.

Physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 353, 421, 422, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 and 113; and Computer Science 115.

Engineering physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 353, 361, and either 242 or 262; Mathematics 121, 122, 201, 222, and 321; Engineering 118; Computer Science 115; Chemistry 105 and 113; and Economics 100.

Chemical physics majors are required to take Physics 101, 102, 202, 221, 241, 301, 302, 321, 353, 421, 491, and 492; Mathematics 121, 122, 201, 222, and 321; Computer Science 115; and Chemistry 113, 114, 344, and 352.

Secondary education majors in physics are required to take Physics 101, 102, 202, 221, 241, 242, and 321; Earth Science 215; Chemistry 105 and 113; Biology 105, 105L, 108, and 108L; Mathematics 121 and 122; Computer Science 115 or 121; and Education 205, 230, 305, 415, and 473.

General science education majors (with a concentration in physics) fulfill the course requirements listed in the interdisciplinary section of this catalog.

At Elizabethtown College, **engineering students in the 3/2 program** are required to take Physics 101, 102, 202,

221 and 353 or 301 and 302, 241, 242 or 321, 262, and 361; Engineering 118; Mathematics 121, 122, 201, 222, and 321; Chemistry 105 (114 for Chemical Engineering majors) and 113; Computer Science 115; Economics 100; and English 100 or 150, and 382. Students in the 3/2 pre-engineering program are exempt from one three credit course in *either* the Cultural Heritage or Social World area of understanding.

Computer engineering majors are required to take Physics 101, 102, 202, 221, 241, 242, 301, 302, 321, 353, and 361; Mathematics 121, 122, 201, 222, and 321; Computer Science 121, 122, 221, 222, and 332; Engineering 118; Chemistry 113; and Economics 100.

Industrial engineering majors are required to take Physics 101, 102, 202, 241, 321, 361, and either 242 or 262; Engineering 118 and 411; Mathematics 121, 122, 151, 201, and 222; Accounting 305; Computer Science 115; Chemistry 105 and 113; Economics 100 and 102; Business Administration 265, 369, 466, and either 330 or 468; either Business Administration 248 or Mathematics 331; either Business Administration 355 or English 382; and Psychology 105.

Minors in physics are required to take Physics 101, 102, 202, 221, and eight additional credits in physics.

101* Physics I

4 credits. **(Natural World)** Introduction to the basic concepts of mechanics, classical kinematics and dynamics (linear and rotational motion, force and torque, energy), friction, statics, fluids, kinetic theory of matter. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite or Corequisite: Mathematics 121.* Fall semester. Prof. Ferruzza.

102 Physics II

4 credits. A continuation of Physics 101. Introduction to the basic concepts of electricity, magnetism, geometrical optics, interference and diffraction, and brief introductions to relativity, quantum theory, atomic and nuclear physics, and elementary particle physics. Hours: lecture 3, discussion 1, laboratory 2. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

113* Spacetime Physics

4 credits. **(Natural World)** A layman's introduction to Einstein's Special Theory of Relativity, including frames of reference, Galilean relativity, measurement of space and time, the constancy of the speed of light, the behavior of moving clocks and measuring sticks, the meaning of simultaneity, geometrical representation of spacetime, mass-energy equivalence, and some of the paradoxes of special relativity. Hours: lecture 3, laboratory 2. *Prerequisite: High school algebra.* Fall semester. Prof. Ranck.

114* Cosmology

3 credits. **(Natural World)** A non-mathematical study of the origin, evolution, structure, and future of the universe according to various scientific theories. The history of cosmology and its interactions with society. Worldviews associated with nihilism, existentialism, holism, reductionism, the anthropic principles, and the theistic principle. Spring semester. Prof. Stuckey.

202 Physics III

4 credits. An introduction to special relativity and mathematical methods for physicists and engineers. Special relativity topics include time dilation, length contraction and the energy content of matter. Mathematical techniques involved in describing physical phenomena such as waves and energy transfer are studied. Hours: lecture 3, laboratory 3. *Prerequisite:*

site: Physics 102; Prerequisite or Corequisite: Mathematics 222. Spring semester. Prof. Stuckey.

212* Astronomy

4 credits. **(Natural World)** A study of the structure and evolution of stars, planetary systems, galaxies and the universe. Less familiar astronomical objects such as black holes, quasars, cosmic strings, texture, and wormholes are also studied. Laboratories provide an opportunity to observe planets, stars, clusters, and galaxies; they also provide practical experience in determining astronomical quantities. Hours: lecture 3, laboratory 2. Fall semester. Prof. Stuckey.

216* Quantum Theory and Reality

3 credits. **(Natural World)** A non-scientist's non-mathematical introduction to 20th century physics, especially quantum theory, the men and women who created the field, and the philosophical problems quantum theory presents for the foundations of physics. Spring semester. Prof. Ranck.

221 Modern Physics (Chemistry 343)

3 credits. Physics of the 20th century including X-rays, radioactivity, atomic spectra, blackbody radiation, an introduction to quantum mechanics, atomic orbitals, elementary particles, and nuclear structure and transformations. *Prerequisite: Physics 102, Mathematics 122.* Fall semester. Prof. Ranck.

241 Electronics

3 credits. Practical and theoretical study of fundamental components and circuits, including transistors, diodes, integrated circuits, power supplies, filters, amplifiers, control circuits, and some digital electronics. Hours: lecture 2, laboratory 4. *Prerequisite: Physics 102.* Fall semester. Staff.

242 Computer Systems Interfacing (Computer Science 333)

3 credits. Digital Logic and integrated circuits to implement logic; architecture and machine language programming of microprocessors; design, testing, and construction of instrument-to-computer interfaces and computer-to-computer interfaces; design and testing of supporting software. Hours: lecture 1, laboratory 6. Spring semester. Prof. Leap.

262 Statics & Dynamics

3 credits. Equilibria of particles and rigid bodies subject to concentrated and distributed forces, with practical applications to mechanical systems. Topics include unbalanced forces, work and energy, and impulse and momentum. *Prerequisite: Physics 101.* Spring semester. Prof. Ferruzza.

301 Mechanics

3 credits. An intermediate course in mechanics. Newtonian mechanics of systems of particles, central forces, oscillations, collisions, rigid-body dynamics, and the Lagrangian and Hamiltonian formalisms for generalized coordinates. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 201, 321.* Fall semester. Staff.

302 Electromagnetism

3 credits. An intermediate course in electromagnetism, including electro- and magnetostatics and dynamics, Maxwell's equations, macroscopic fields, electromagnetic waves, and special relativity. *Prerequisite: Physics 202; Prerequisite or Corequisite: Mathematics 321.* Spring semester. Staff.

321 Thermal and Statistical Physics

3 credits. The principles of thermodynamics, including variables and equations of state, the laws of thermodynamics, heat engines, phase transitions, blackbody radiation, heat transfer, and kinetic theory. *Prerequisite: Physics 102.* Fall Semester. Prof. Ferruzza.

353 Advanced Physics Laboratory (Chemistry 353)

4 credits. Experimentation, data acquisition, data analysis, and technical presentations appropriate for the physical and chemical sciences. Emphasis on statistics of physical/chemical experimental data and computer methods of analysis, including electronic laboratory notebooks and computer networks. Hours: lecture 2, laboratory 6. *Prerequisites: Physics 102, Mathematics 121, Computer Science 115.* Fall semester. Prof. Ranck.

361 Engineering Practices Seminar

1 credit. Weekly presentations and discussions by students and faculty of practices, techniques, and topics in the engineering profession. *Prerequisite: permission of instructor.* Fall semester. Prof. Ferruzza.

371-379 Topics in Physics

Variable credits. Topics in physics not covered in other courses. *Prerequisite: Permission of instructor.* Staff.

421, 422 Quantum Physics I, II

3 credits each. Quantum theory, including the formalisms of Schrodinger, Heisenberg, and Dirac; the uncertainty principles; quantum solutions to problems in classical mechanics; spin-1/2 systems; scattering theory perturbation theory; atomic physics; Bose-Einstein and Fermi-Dirac statistics for many-particle systems; and the interaction of radiation with matter. *Prerequisites: Physics 221, 301, and 302.* Staff.

423 General Relativity

3 credits. An introduction to calculus on manifolds, differential topology, exterior calculus, affine geometry, Riemannian geometry, special relativity, and general relativity with applications to relativistic cosmology. *Prerequisites: Mathematics 122 and 201 or permission of the instructor.* Spring semester. Prof. Stuckey.

481-489 Independent Study

Variable credits. Study and experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of instructor.* Staff.

491, 492 Research I, II

3 credits each. An original experiment or theoretical investigation performed under the close supervision of a faculty member. A written thesis and a public seminar are required. Hours: laboratory 6. *Prerequisite: Permission of instructor.* Staff.

Earth Science

ES 105 Field Earth Science

8 credits. An intensive introductory-level course in which the general principles of geology are studied through a selected series of readings, direct field experiences and map analysis. Students participate in a two or three week field camp and complete their course of study with a comprehensive regional geology report. *Prerequisite: Permission of the instructor.* Summer session. Prof. Thompson.

ES 111* The Dynamic Earth

4 credits. **(Natural World)** An examination of the physical makeup of the earth and the dynamics of its evolution as a planet. Included are studies of basic minerals, rock families, global tectonics, volcanism, seismicity and geological time. Hours: lecture 3, laboratory 2. Staff.

ES 112* The Geology of Landscape

4 credits. **(Natural World)** The study of landscapes, their origin and evolution as produced by natural agents including river systems, glaciers, groundwater, wind, and waves. Contrasting views of Davis, Hack and other theorists are included. Hours: lecture 3, laboratory 2. Prof. Thompson.

ES 215* Meteorology

3 credits. **(Natural World)** General studies of weather and associated atmospheric phenomena, their causes, effects, and geographic distribution. Standard weather maps are used. Staff.

ES 215L* Meteorology Laboratory

1 credit. **(Natural World)** Comprehensive meteorological analysis to include a 3 dimensional structure of the atmosphere. *Prerequisite or corequisite: Earth Science 215.* Staff.

ES 216 Physical Geography

3 credits. An introduction to the physical bases for geography including earth/sun relationships, map projections, weather patterns, climates, and landforms. *Prerequisite: Education major or permission of instructor.* Spring semester. Prof. Thompson.

ES 371-379 Special Topics in Earth Science

Variable credits. Study of an advanced topic, experimental or theoretical, of special interest to the student. *Prerequisite: Permission of instructor.* Prof. Thompson.

ES 481-489 Independent Study in Earth Science

Variable credits. Study and/or experimentation in an area of interest to the student and faculty member. *Prerequisite: Permission of instructor.* Prof. Thompson.

Engineering

ENGR 118 Engineering Methods & Graphics

3 credits. Introduction to engineering communication through graphics (projections, pictorials, dimensioning, working drawings, graphs, and spatial relationships). Instruction and practical exercises in computer graphics, including computer aided design (CAD). Hours: lecture 2, laboratory 6. Spring semester. Staff.

ENGR 411 Work Measurement, Quality Assurance, and Human Factors

3 credits. Production management with emphasis on process improvement, work measurement, cost reduction, application of statistical techniques to quality assurance; and ergonomics. *Prerequisite: Business Administration 248; Co- or Prerequisite: Business Administration 369.* Fall semester. Prof. Ferruzza.

Department of Political Science

Professors Gottfried, Selcher (*Chair*)

Associate Professors Beyerlein, McClellan, McDonald

Bachelor of Arts

Through the liberal arts blend of social science and the humanities which is political science today, the department seeks to assist the student in thinking clearly and logically about political questions facing the community, state, nation, and world. The department perceives three principal approaches to the discipline: the normative approach considers the values and ethical choices inherent in public policy; the empirical approach employs techniques to analyze how political systems function; the policy-oriented approach encourages the individual to responsible and informed action as citizen, government official, lawyer, or businessperson. A major in political science provides preparation toward a career in party or interest group politics, law, public administration, regional and urban planning, personnel and public relations, teaching, publishing, communications, the diplomatic corps, political research, and consulting, among others. Beyond its worth in career terms, the study of politics and government can lead to more effective pursuit of a person's political interests as a civic responsibility or as an avocation.

The department encourages students to pursue internship opportunities through its Capital Semester Internship or through those sponsored by other institutions. The

department participates in Boston University's International and Washington Internship Programs, as well as the Washington, D.C.-based programs offered through the Elizabethtown College Department of Communications.

The major in political science requires the following courses: Political Science 111, 112, 223, 224, 330, 351, and 498. An additional 18 credits of political science or approved non-political science courses must be completed, including one nine or 12 credit concentration described below. Moreover at least one semester of a modern foreign language at the 112 level or higher is required. General electives from the other social sciences are encouraged.

For a *concentration in American Politics and Public Policy*, a student must take three of the following courses: Political Science 313, 316, 318, 365, or 366. For a *concentration in Public Law and Political Philosophy*, a student must take three of the following courses: Political Science 311, 324, 326, 348, or Philosophy 315. For a *concentration in International Politics and Public Policy*, a student must take three of the following courses: Political Science 245, 252, 341, 345, or 348. For a *concentration in Public Administration*, a student must take 12 credits from the following courses: Political Science 361, 362, 471 (six credits), Economics 304, or Sociology 331.

A minor in political science requires 21 credits of course work. The following courses are required: Political Science 111, 112, 223 or 224, and 245 or 351. Nine additional credits in political science or approved non-political science courses must be taken. At least six of the credits must be at the 300 or 400 level in political science. A student may take these elective credits in one of the concentrations described above, but no concentration is required for the minor.

The department will accept the following non-political science courses as electives in the political science major or minor: Economics 304, English 283, Philosophy 315, and Sociology 331.

The department participates in the secondary school certification in social studies program, the forestry and environmental management major, and the environmental science major, offering a political science or a public policy concentration.

105* Western Political Heritage

3 credits. **(Values and Choice)** An introduction to the major political thinkers of the Western political tradition from Plato to Lenin. Justice, equality, rights, freedom, order and community are among some of the ideas to be examined from a variety of critical and historical perspectives. *Note: Students who have received credit for Political Science 205* may not enroll in this course. This course for non-majors only.* Prof. McDonald.

111* American National Government

3 credits. **(Social World)** Analysis of the development of the U.S. Constitution, the federal system, civil rights and liberties; public opinion, political organizations, and elections; the presidency, Congress, federal bureaucracy and courts; federal government policies in economic and foreign affairs. Profs. Gottfried, McClellan.

112 State and Local Government

3 credits. Analysis of the politics, institutional structures and processes, and policies of state and local governments in the U.S.; comparison of different types of state and local systems and their handling of issues such as education, criminal justice, and social welfare. Spring semester. Prof. Beyerlein.

205* Values and Vision

3 credits. **(Values and Choice)** Study of the works and ideas of great social and political thinkers from the Ancients to the present. Justice, equality, community, freedom, feminism, environmentalism, and multiculturalism will be among some of the contemporary social, political, and cultural issues examined and debated. *Note: Students who have received credit for Political Science 105* may not enroll in this course. This course for non-majors only.* Prof. McDonald.

223 History of Western Political Thought I: Ancient to Renaissance

3 credits. A survey of major political thinkers from Plato to Machiavelli. Self, politics, nature, order and freedom will be among the topics examined. Prof. McDonald. *Students who have received credit for Political Science 222 may not enroll in this course.*

224 History of Western Political Thought II: Enlightenment to the Moderns

3 credits. A survey of major political thinkers in the West and their writings from Thomas Hobbes to the present. Self, politics, nature, order, rights and freedom will be among the topics examined. Prof. McDonald. *Students who have received credit for Political Science 222 may not enroll in this course.*

245* International Relations

3 credits. **(Foreign Cultures and International Studies)** Survey of the basic units of analysis, concepts, and principles of global international relations, with emphasis on the formulation and implementation of foreign policy in the context of political, economic, military, and cultural factors. Prof. Selcher.

252* Latin American Society

3 credits. **(Social World)** A study of Latin American socio-cultural formation in its historical, political, and economic dimensions, with comparison to and contrast with the United States' experience and consideration of current social issues. Prof. Selcher.

311 Constitutional Law

3 credits. History and development of the Constitution. Evaluation of leading Supreme Court decisions with emphasis on current decisions and cases in the light of history and of possible future trends. Prof. Gliptis.

313 The American Presidency

3 credits. An examination of the development of the modern presidency as institution, symbol, and policy-maker. Topics to be covered include the nature of presidential power, the institutional presidency, relations with the public and governmental institutions in the U.S., and policy leadership in foreign and domestic affairs. Spring semester, alternate years. Prof. McClellan.

316 The American Electoral Process

3 credits. Analysis of the process of recruiting, nominating, and electing candidates for national office in the U.S., the major participants in national elections, and the impact of elections on public policy-making. Fall 1996. Prof. McClellan.

318 Mass Media and American Politics

3 credits. Analysis of the role and influence of the mass media in American politics, emphasizing the development of the media industry and its relations with government, the political communications process, and the impact of the media on public opinion, elections, and public policy-making. Profs. Beyerlein, McClellan.

323 Politics Through Film and Literature

3 credits. An examination of a variety of political novels and films and how these art forms have significantly shaped our understanding of

politics. Democracy, totalitarianism, social inequality, and the prospects for nuclear war are among some of the topics examined. Prof. McDonald.

324 Modern Ideologies

3 credits. A survey of Marxism, socialism, anarchism, liberalism and conservatism, and an analysis of the motives and goals of their major proponents. Spring semester. Prof. McDonald.

326 American Political Thought

3 credits. Historical analysis of major American political thinkers from the Puritans to the present with special consideration given to the founding principles of the American republic. Fall semester. Prof. McDonald.

328 Politics and Religion (Religion 328)

3 credits. Examination of relationships between forms of government and religious attitudes and practices, with discussion of the influence of religion on political life and of religious interpretations of politics. Prof. Gottfried.

330 Research Methods (Sociology 330, Social Work 330)

3 credits. Techniques of empirical political research and the development of modern methods of analysis and data presentation in political science, with reference to contributions from other social sciences. A major research project on methodology is required. Fall semester. Prof. Beyerlein.

341 Decision Making Research for Foreign Investment

3 credits. Development and analysis of decision-making processes to be used in foreign investment, with quantitative and qualitative research techniques on macro and micro political and economic factors. *Prerequisite: Mathematics 151*. First offered in fall 1995. Prof. Beyerlein.

345 American Foreign Policy

3 credits. U.S. foreign relations since World War II, within an integrated analytical approach to identify the characteristic processes of decision-making and the patterns of those decisions over the decades. Prof. Selcher.

348 Public International Law

3 credits. Interactions among governments, organizations, and individuals in the world community regarding the sources and modern development of international law. Prof. Gliptis.

351 Comparative Politics

3 credits. A comparison and contrast of the political systems of selected foreign nations, emphasizing the historical development of party systems, political cultures, and executive-legislative relations. Fall semester. Prof. Selcher.

361 Public Administration

3 credits. A study of administrative organization, personnel administration, decision-making, and communications, with emphasis on the relation of administrative bureaus to the public, the executive office, the legislature, and the judiciary. Fall semester. Prof. McClellan.

362 Decision Making for the Public Sector

3 credits. An analysis of how public policy is composed, from both qualitative and quantitative perspectives and models, such as PERT-CPM networking, cost-benefit analysis, decision trees and tables, and multivariate analyses, to complement the qualitative factors in the decision making process. *Prerequisite: Mathematics 151*. Prof. Beyerlein.

365 Women and Public Policy

3 credits. Examination of formal and informal political systems and their effects on policies that attend to women's lives. Topics discussed are gender violence, feminization of poverty, workplace inequities, women's health issues, and lifestyle preference. Prof. Beyerlein.

366 Government and Business

3 credits. An examination of relations between the public and private sectors, and of specific public policies toward business such as antitrust, economic and social regulation, and trade. Prof. McClellan.

370-379 Special Topics

3 credits. Topical areas and problems of political science; subjects chosen in accord with student demand. Staff.

471 Capital Semester Internship

6 credits. Applied field experience in politics and public administration for state or local government agencies, the state legislature, and private political organizations. Prerequisites: *Political Science 361 and permission of instructor*. Spring semester. Prof. McClellan.

480-489 Independent Study

Variable credit. Designed to offer independent study to advanced students, making use of techniques of political science in specific problem areas not included in the Department's regular offerings. Staff.

498 Senior Seminar

3 credits. An integrative, capstone course in political science, in which significant controversies in political theory and practice will be discussed and analyzed. *Prerequisite: Senior status or permission of instructor*. Staff.

Department of Psychology

Professors Dennis, Ellsworth (*Chair*)

Associate Professor Teske

Assistant Professors Dillon, Lemley, Rider

Bachelor of Arts

The Psychology Department offers preparation for careers in human services and education, and preparation for graduate and professional training in clinical, experimental, and applied psychology, and related fields. The student learns the principles and theories of psychology as currently understood and acquires the ability to derive new principles. The student is required to participate in topical and methodological studies, and may participate in field experience and research.

The department offers the Bachelor of Arts degree. The department also offers a minor in psychology with two tracks, one in general theory and methods; the other in child psychology. The department also offers a concentration for students pursuing the secondary education certification in social studies. See the interdisciplinary section of this catalog.

Courses required for the *bachelor of arts* degree are Psychology 105, 106, 213, 218, 221, 222, 225, 235, 317, 321, 402, 413 or 414, and 425 or 435.

Courses required for the *general psychology minor* track are Psychology 105, 213, and eleven additional credit hours, at least six of which are to be in upper division (300/ 400) courses. Students are encouraged to tailor their selection of courses to their personal and career goals in consultation with a member of the psychology faculty.

Courses required for the *child psychology minor* track are Psychology 105, 225, 333, 334, and six credits of Psychology electives.

105* General Psychology

3 credits. **(Social World)** An introduction to the principles of behavioral science, including consideration of motivation, learning, personality, and sensory and perceptual processes. Staff.

106 Experimental Psychology

4 credits. The empirical and logical bases of psychological theories of perception, learning, memory and thinking, and motivation and emotion. Laboratory exercises provide evidence for contemporary psychological theories. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105.* Spring semester. Prof. Ellsworth.

108* Addictions

1 credit. **(Physical Well Being)** The psychology, pharmacology, neurophysiology, and psychotherapy of alcohol and drug addiction integrated into everyday life experiences. Staff.

208* Health Psychology

3 credits. **(Natural World)** A study of physiology and neuro-chemistry of pain and stress related illness and those behaviors that contribute to illness. Consideration is given to philosophical questions of the mind-body relationship and the practical question of compliance with treatment regimens and the ethical question of self-determination. Spring semester. Prof. Ellsworth.

213 Research Methods

4 credits. The methods of psychology. Emphasis on research design and data analysis as the basis for evaluating psychological literature. Consideration is given to the philosophy of science. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 105* Fall semester. Prof. Dillon.

218 Psychological Statistics

3 credits. Statistics in psychology, including percentiles, standard scores, t-tests, analysis of variance, correlation, regression and prediction, Chi square and other selected procedures. Emphasizes statistical reasoning, as well as application to psychological contexts. *Prerequisite: Psychology 213.* Spring semester. Prof. Dillon.

221 Abnormal Psychology

3 credits. A study of mental disorders including schizophrenic, substance abuse, anxiety, and psychosexual disorders. Research and theories regarding diagnosis, causes, and treatments are reviewed. *Prerequisite: Psychology 105.* Spring semester. Prof. Dennis.

222 Physiological Psychology

3 credits. Survey of the biological basis of psychological processes, including neurons and brain organization, the endocrine system, sensory processes, motor control, higher cortical functions and dysfunctions. Also, the basis of sleep, hunger, sex, emotion, language, and related topics. This course and Biology 202 may not both be taken for credit. *Prerequisite: Psychology 105.* Spring semester. Prof. Lemley.

225 Developmental Psychology

3 credits. Physical, perceptual, linguistic, intellectual, and social-emotional human development, covering the periods of infancy, childhood, adolescence, adulthood, and old age. *Prerequisite: Psychology 105.* Prof. Rider.

235 Social Psychology

3 credits. The processes by which the social environment influences human thought, feelings, and behavior, providing coverage of such topics as self-perception, impression formation, attitudes, social influence, aggression, relationships, inter-personal communication, and environmental transaction. *Prerequisite: Psychology 105.* Prof. Teske.

237* Psychology of Women

3 credits. **(The Social World)** A psychological approach to understanding both the behavior of women and the female experience. Topics

include development across the lifespan; language and reasoning; victimization; physical well-being; mental health; and stereotype-based conflicts. Fall semester. Prof. Rider.

252 Psychology of Music

2 credits. Study of acoustics and the Psychology of music as they relate to life and the music professions. An examination of the events and circumstances that occur in music and influence it. *Prerequisite: music major or permission of instructor.* Spring semester. Prof. Rohrbacher.

317 Learning

4 credits. Study of major theories, methods, and empirical findings in the area of both human and animal learning. Students conduct various experiments with humans and animals. Hours: lecture 3, laboratory 2. *Prerequisite: Psychology 213.* Fall semester. Prof. Lemley.

321 Theories of Personality

3 credits. A critical comparison of the major theories of personality, including psychoanalytic, humanistic, behavioral, and social learning approaches. *Prerequisite: Psychology 105 and permission of instructor.* Fall semester. Prof. Teske.

333 Tests and Measurements

3 credits. A study of the theoretical and practical considerations of evaluation and psychological measurement. Emphasis is on test construction and interpretation. *Prerequisite: Psychology 105.* Spring semester. Prof. Dillon.

334 Exceptional Children and Youth

3 credits. A survey of the research and theories on the physical, intellectual, and social-emotional deviations of children, including an examination of both psychologically handicapped and gifted children. *Prerequisite: Psychology 225 or permission of instructor.* Spring semester. Prof. Rider.

371-379 Special Topics

Variable credit. Study of topics not otherwise covered in the curriculum. Offered when student interest and faculty availability justify. *Prerequisite: permission of instructor.* Staff.

401 Counselling Psychology

3 credits. An introduction to counseling and therapeutic skills. Substantial class time is devoted to role-playing various counselor/counselee situations and an examination of the assumptions which students bring to the role of counselor. *Prerequisites: Psychology 105 and permission of instructor.* Prof. Dennis.

402 History and Systems of Psychology

3 credits. A study of major historical systems in psychology, including structuralism, functionalism, behaviorism, gestalt psychology, and psychoanalysis. *Prerequisite: Psychology 105.* Fall semester. Prof. Dennis.

413 Perception

3 credits. A study of the theories and empirical findings in the area of sensory and perceptual functioning with emphasis upon visual processing. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 and permission of instructor.* Spring semester. Prof. Lemley.

414 Memory and Thinking

3 credits. A study of the theories and empirical findings in the areas of the acquisition and retrieval of information, concept formation, and problem solving. Students will be expected to conduct a research project. *Prerequisite: Psychology 213 and permission of instructor.* Fall semester. Prof. Ellsworth.

425 Research in Developmental Psychology

3 credits. A study of the developmental theories of psychological abilities, traits, and processes, including a critical review of relevant empirical evidence. Students will be required to conduct a research project. *Prerequisites: Psychology 213, 225, and permission of instructor.* Spring semester. Prof. Rider.

435 Research in Social Psychology

3 credits. A critical examination of selected areas of social psychological

research with attention to methodological issues and social relevance. Students will participate in original research. *Prerequisites: Psychology 213, 235, and permission of instructor.* Fall semester. Prof. Teske.

475 Field Study

4 credits. Supervised training and experience in a professional setting related to psychology, generally for two afternoons a week, plus weekly meetings with the instructor. Placement depends on student interest and goals, and availability of professional setting. *Prerequisites: Psychology 105 and permission of instructor.* Prof. Dennis.

480-489 Independent Study

Variable credit. This course offers the mature student the independence to pursue educational experiences not otherwise available in the curriculum. *Prerequisite: permission of instructor.* Staff.

491-492 Research Practicum

Variable credit. Research in psychology under the close supervision of a faculty member. Topics for research are chosen in an area of interest to both persons. Offered by individual faculty-student arrangement. *Prerequisites: Psychology 213 and permission of instructor.* Staff.

Department of Religious Studies

Professors: Clemens, Kraybill,

Puffenberger (*Chair*)

Associate Professors Bucher, Crocker

Bachelor of Arts

The Department of Religious Studies seeks to broaden the student's liberal education by pursuing creative ventures which often cross traditional disciplinary lines. It encourages students to think independently and critically, to express themselves clearly and effectively in written and oral communication, to make careful judgments based upon accepted moral values, and to understand our western religious heritage and its relation to other faith-traditions.

While committed to the Christian tradition, the department does not profess a single denominational consensus; it operates in the midst of a pluralistic religious milieu. Because of this diversity, the study of religion includes a variety of skills: historical investigation, textual criticism, ethical analysis, and cultural interpretation. To all of this must be added the essential ingredient of empathetic tolerance for the claims that other individuals make regarding what they perceive as ultimate truth. In this light, our courses seek to sympathetically explore, compare, evaluate, and appreciate the varied religious insights of humankind.

The Religious Studies major is designed to serve as a preprofessional foundation for those students wishing to pursue study beyond the baccalaureate degree (i.e., graduate seminary training, social work, counseling, journalism, religious education, and other related fields).

A *major* in Religious Studies consists of twelve courses (36 hours) which includes the three-hour Senior Research Project/Thesis. The program of study must include at

least one course from each of the following four categories: biblical studies, ethics and theology, comparative religions, and peace studies. The Department of Religious Studies requires the study of a biblical or modern foreign language at the college level for one full year. It is recommended that students who intend to pursue graduate work take Greek and/or Hebrew.

A student enrolled in a double major may petition the department faculty for a two course (six credit) reduction in the requirements of the major. Additionally, it does not insist upon meeting the language requirement.

A *minor in Religious Studies* consists of six courses (18 credits) which must include at least one course in each of the following areas: biblical studies, ethics, and comparative religions. Minors in *Peace and Conflict Studies* and *Anabaptist and Pietist Studies* are also available. See the Interdisciplinary Programs of the Academic Program for further details.

101* The Religious Literature of Ancient Israel

3 credits. (**Cultural Heritage**) An introduction to the literature of ancient Israel (i.e., the Jewish Tanakh/Christian Old Testament), focusing on developing skills of historical-critical exegesis. Prof. Bucher.

102* The Religious Literature of Early Christianity

3 credits. (**Cultural Heritage**) An introduction to the literature of early Christianity, primarily that found in the New Testament. The course focuses on the development of the skills of historical-critical exegesis. Prof. Bucher.

105* Forms of Religious Experience

3 credits. (**Values and Choice**) A survey of the basic categories needed for an understanding of religious phenomena. Attention given both to formal expressions and substantive experiencing, with emphasis upon mystical intuition. Myth, symbol, and imagery is of special interest. Prof. Clemens.

165* Introduction to Peace and Conflict Resolution

3 credits. (**Values and Choice**) The foundation course in the peace studies minor. Investigates causes of conflict and alternate modes of resolution, including mediation. Prof. Clemens.

170-179 Special Topics in Religion

3 credits. Courses of an experimental nature offered occasionally at the freshman-sophomore level. Includes such topics as: The Social World of Ancient Israel, The Social World of Early Christianity, etc. Staff.

201 Ancient Near Eastern Religions

3 credits. Introduces the major religious traditions of the ancient Near East: the religions of the Sumerians, Babylonians, Assyrians, Canaanites, Israelites, and Egyptians. It examines the theology, worldview, and religious practices of each of these traditions. Prof. Bucher.

202 Archaeology and the Bible

3 credits. Introduces the basic principles, techniques, and theoretical assumptions of archaeology as practiced in the Middle East. Surveys the major archaeological discoveries that have shed light on the Bible and biblical history. *Prerequisite: permission of the instructor.* Prof. Bucher.

205 Contemporary Religious Issues

3 credits. A survey of relevant problems and issues on the contemporary American religious scene. Primary emphasis is upon the cutting-edge issues in Protestantism, Roman Catholicism, and Judaism. Staff.

213* Religion and Gender

3 credits. (**Values and Choice**) Introduces students to contemporary theological discussions originating with feminist critiques of religion. Examines the way in which an androcentric perspective has influenced religious language, beliefs, and practices. Prof. Bucher.

215* Social Ethics

3 credits. **(Values and Choice)** The development of a community oriented ethic, beginning with self-actualization and concluding with the social values of equality and justice. Attention is given to the conceptual tools needed to analyze conditions of alienation and conflict. Prof. Clemens.

221 Western Religions

3 credits. **(Foreign Cultures and International Studies)** An introduction to the major religious traditions of the Near East. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Zoroastrianism, Judaism, Christianity, and Islam. Prof. Puffenberger.

222 Eastern Religions

3 credits. **(Foreign Cultures and International Studies)** An introduction to the major religious traditions of India, China, and Japan. A sympathetic and comparative examination of the basic history, scriptures, and faith-insights of Hinduism, Buddhism, Jainism, Sikhism, Taoism, Confucianism, and Shintoism. Prof. Puffenberger.

225 Anabaptist and Pietist Movements

3 credits. A study of the European historical and theological backgrounds of the Anabaptist and Pietist movements as they relate to the Church of the Brethren and other denominations within the context of "The Believer's Church." Staff.

230 Religion in America

3 credits. Surveys the rich diversity of religious America within the setting of the larger cultural and social experience. Emphasis on the uniquely American religious experience, as well as the identity and integrity of each separate tradition. Prof. Clemens.

255 Business Ethics

3 credits. A critical analysis of contemporary ethical dilemmas in the context of American business practice. Utilizes normative ethical theory, Kohlberg's model of moral development, and case study analyses as a way to clarify competing ethical principles and to evaluate differing ethical judgments. Prof. Puffenberger.

266* Psychology of Religion

3 credits. **(Social World)** The course explores the relationship between psychology and religion, examining both subjects as examples of cultural systems. Emphasis is placed on reading of classic texts by William James, Sigmund Freud, and Carl Jung. Ways of exploring this subject through experimental methods are considered. Prof. Crocker.

310 Biblical Perspectives on Peace and Justice

3 credits. An examination of the ways in which the values of peace and justice were understood and practiced in the ancient Israelite and early Christian communities. *Prerequisite: Rel 101 or 102 or permission of the instructor.* Prof. Bucher.

315 Issues in Death and Dying

3 credits. A cross-disciplinary introduction to the mystery and meaning of death and its intimate relationship to life. Presupposes the notion that the best preparation for life is an in-depth study of its nonexistence. *Prerequisite: permission of the instructor.* Prof. Puffenberger.

317 Sociology of Religion (Sociology 317)

3 credits. An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Prof. Kraybill.

325 The Great Mother Goddess and Patriarchy

3 credits. A conversational circle focusing upon the dual motifs of the nurturing mother and the controlling father deities. The content is both historical and topical, with special attention given to an analysis of the ideological bases and cultural values implicit in these two contrasting social systems. Prof. Clemens.

328 Politics and Religion (Political Science 328)

3 credits. An exploration of the ties between religious and political thinking which examines the development of church-state relations in the West. Discussions focus on the similarities and differences between

St. Augustine and Thomas Hobbs, theorists standing at the beginning and end of the medieval period. A central question addressed is: to what extent has Christianity been a 'political religion'? Prof. Gottfried.

335 Renaissance and Reformation History (History 315)

3 credits. A study of the civilization of the Renaissance in Italy, with emphasis on Florence, Erasmus, and the Protestant Reformation of the sixteenth century. Staff.

351 Religion and Violence

3 credits. A study of the reasons for hatred and war as well as a survey of the tension between patriotism and faith as found in the traditional and quasi-religions of our day. Critically examines the ideas of just war, pacifism, non-violent resistance, etc. Prof. Puffenberger.

355 Bio-Ethics

3 credits. A critical examination of the ethical problems that arise in the practice of medicine and the pursuit of biological and medical research. Its case study approach wrestles with the task of determining not only how ethical principles apply, but how to order the principles when not all of them can be followed. Prof. Puffenberger.

357 The Church's Role in Social Change

3 credits. Combines historical and topical consideration of the church's posture toward the state and social change. An applied section views current tense situations in order to arrive at a tenable position on the church's role. Prof. Clemens.

361 Anabaptist and Pietist Groups to 1850 (Sociology 361)

3 credits. Introduces the spectrum of groups: Brethren, Mennonites, Amish, Inspirationalists, Moravians, The Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Notes their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival and revolution. Staff.

362 Anabaptist and Pietist Groups since 1850 (Sociology 362)

3 credits. Examines the processes of adaptation, schism, and withdrawal in these groups as they respond to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren, and Mennonite); defensive and accommodation processes; and contemporary religious expressions. Staff.

363 Pacifism Among Anabaptist and Pietist Groups (Sociology 363)

3 credits. Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government, the pacifist compromises of Moravians while protecting Indian converts, and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to civil rights and justice issues. Probes growing interdenominational and international peace discussions and cooperations in the 1980's. Staff.

364 Amish Society (Sociology 364)

3 credits. An introduction to the history, culture, and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

370-379 Special Topics in Research

3 credits. Courses offered occasionally on the basis of interest and demand, as intensive studies of a selected religious theme or area of interest. Includes such topics as: Liberation Theology; Evangelical Theology; Esoteric Religions; Religious Cults in America; The Buddhist Tradition; Taoism and Zen; Prophecy and Apocalyptic Thought; Wisdom Literature; Islamic Thought; Eastern Scriptures; Biblical Hebrew; New Testament Greek; Power and Mediation; Jesus and the Gospel Tradition; Mysticism; etc. Staff.

465 Directed Research Project (for Peace Studies minors)

3 credits. A capstone seminar designed to integrate previous work and produce a major research paper. Staff.

470-479 Internship

1-3 credits. Designed to give the individual student the opportunity to pursue an experiential learning experience in an area of major interest under the guidance of a department member. Staff.

480-489 Independent Study

3 credits. Involves individualized study in area where courses are not normally offered. Research is done under the supervision of one or more departmental faculty members. Open to Religious Studies minors by special request. Staff.

490 Senior Research Project/Thesis

3 credits. A specialized study project required of all majors during their senior year. It is to be initiated by the student, supervised by one or more faculty members, and to culminate in a major research paper which will be presented orally to the departmental faculty. Staff.

Department of Social Work

Associate Professor Bergel (*Chair*)

Assistant Professors L. Martin, McFarland

Bachelor of Arts

Social Work is a multi-faceted profession concerned with change both on an individual, community, national, and international level. Within the framework of a liberal arts tradition, Elizabethtown's social work program prepares the student for entry into professional social work practice. The program also prepares students to enter graduate school. The program is based on an understanding of generalist practice which allows the graduate to choose from a wide range of social service careers.

The *major* in social work recognizes both the rural and urban environments of the Elizabethtown College community and seeks to prepare students for professional social work practice in either setting. The program is accredited by the Council on Social Work Education.

The program provides an extensive opportunity for field experience, beginning with the sophomore year. The major culminates with 600 hours of field instruction during the student's senior year. Field experiences are arranged to meet the student's individual interest. Field experiences include but are not limited to such areas as child welfare, corrections, mental health, rehabilitation, health care, schools, and aging.

The Social Work major requires prospective students to apply for admission to the program. This application requires the following:

1. A formal interview with a social work faculty member where professional interests and abilities are explored.
2. A short essay describing the applicant's interest in the field of social work.
3. Formal admittance to Elizabethtown College.

This application procedure may occur before the student enters Elizabethtown College or at any time after admittance. Admittance into the program does not guarantee that the student will graduate with a degree in social work. The advisor, in conjunction with the social work faculty, reserves the right to dismiss a student from the major on the basis of unprofessional behavior and/or academic performance. The student has the right of appeal of the decision based on unprofessional behavior in the same manner as dismissal for academically related reasons.

In order to remain in the department, the student must obtain a minimum grade of C in all Social Work courses required by the major.

The *major in Social Work* requires the following courses: Biology 105, Sociology 101, 220, Psychology 105, Political Science 111, Economics 100, Mathematics 151, Modern Language 112, Social Work 151, 180, 233, 280, 330, 367, 368, 369, 401, 470, 471, and 498.

A *minor in Human Services* is offered by the Department of Social Work. For details of the requirements, see the Interdisciplinary Programs section of the Academic Program. For further information about the minor, contact Dr. Vivian Bergel, department chair.

151* Social Welfare Issues in Contemporary Society

3 credits. (**Social World**) The historical, philosophical, and sociological perspectives of social welfare. Social work, as one profession involved in social welfare, is explored and compared to other professions. Six hours of volunteer experience are required. Spring semester. Profs. Martin, McFarland.

180* Interpersonal Helping Skills

3 credits. (**The Social World**) Skills of providing effective human service, with emphasis on an understanding of human behavior and needs, the role of the helper, and various approaches to problem solving. Laboratory training. Fall semester. Prof. Bergel.

233* Human Behavior in the Social Environment

3 credits. (**Social World**) A study of the interrelationships of social systems, with particular emphasis upon the impact of the environment on human development. Special consideration of the influence of ethnicity, racism, sexism, and ageism upon behavior and he implications for human service delivery. Fall semester. Prof. McFarland.

239* Human Sexuality

3 credits. (**Social World**) A study of socio-sexual behavior, attitudes and knowledge, including sexual socialization, theories of sexual orientation, survey and experimental research and selected items. Prof. McFarland.

280 Rural & Urban Social Welfare Systems

3 credits. A comparison of urban and small town rural areas. The development and organization of rural and urban communities; their network of services designed to address community, family, and individual problems; community development and administration of social service programs. Volunteer experience required. *Prerequisite:* Social Work 151. Spring semester. Prof. Martin.

330 Methods of Social Work Research (Sociology 330, Political Science 330)

3 credits. Fundamental instruction in understanding current research in social work and in applying this knowledge through the course project. *Prerequisite or co-requisite:* Mathematics 151. Fall semester. Staff.

344 Aging: Social Response and Implications

An examination of the aging process in our society. The emphasis is on the interface of the individual and the environment and the services,

needs and institutions related to the elderly. Field trips to social service agencies. Prof. McFarland.

355 Women in Society

3 credits. A sociological inquiry into the current status of women in our society. Topics include the socialization process, the relationship between gender and significant social institutions, and feminist theories that explain the needs and status of women. Prof. Bergel.

357 Child Welfare

3 credits. A study of ethnic, cultural and economic problems as they relate to children, the services available to combat those problems, and the legal and legislative aspects of child welfare. Prof. Martin.

366 Addiction and Society

3 credits. An examination of individual, family, and social implications of addiction in society and an exploration of social policies related to addiction. Fall semester. Staff

367 Generalist Social Work Practice I

3 credits. The first course designed to present theory and develop skills for generalist social work practice. The focus of this course is the individual. *Prerequisite: Social Work 180. Social Work majors only.* Fall semester. Prof. Bergel.

368 Generalist Social Work Practice II

3 credits. The second course designed to present theory and develop skills for generalist social work practice. The focus of this course is groups and families. *Prerequisite: Social Work 367. Social Work majors only.* Spring semester. Staff.

369 Generalist Social Work Practice III

3 credits. The final course designed to present theory and develop skills for generalist social work practice. The focus of this course is on organizations and communities. *Social Work majors only.* Spring semester. Prof. Martin.

371-379 Special Topics in Social Work

3 credit. Reading and discussion of topical areas of social work. Topics will include, but not be limited to, evaluation research, family treatment, group treatment, services to minority groups, and industrial social work. Staff.

401 State and National Social Welfare Systems

3 credits. Study of state and national social welfare policies and systems with emphasis on the relation of social problems, such as poverty, insecurity, and unequal opportunity, to social economic, and political systems. *Prerequisites: Political Science 111, Economics 100.* Fall semester. Prof. Martin.

470 Introductory Field Instruction

3 credits. Supervised field instruction for a least 200 hours in an agency. Student begins to assume responsibility with client systems in such ways as monitoring tasks, providing support, conducting group activities, and assisting the social worker with other professional responsibilities. *Social Work majors only.* Fall semester. Prof. Martin.

471 Advanced Field Instruction

12 credits. Supervised field instruction for at least 400 hours plus a weekly on-campus seminar. Students proceed from an "assistant" position to one of complete client responsibility under direct supervision. Roles students assume may include advocate, enabler, social broker, and program planner. *Prerequisite: permission of instructor; co-requisite: Social Work 498. Social Work majors only.* Spring semester. Prof. Martin.

481-489 Independent Study in Social Work

Variable credit. Opportunity for advanced students independently to pursue study otherwise not available in the curriculum. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. Final course integrating the theory from preceding courses with the professional experience of field instruction. A major project required. *Prerequisite: Social Work 470; co-requisite: Social Work 471. Social Work majors only.* Spring semester. Prof. Bergel.

Department of Sociology and Anthropology

Professor Kraybill

Associate Professor Lehr (*Chair*)

Assistant Professors Kanagy, Wheelersburg

Bachelor of Arts in Sociology-Anthropology

The program of this department provides for the study of interpersonal and intergroup relationships, and the growth, changes, structures, and processes of human society. The courses reflect the philosophical tradition of service of Elizabethtown College and meet the challenges arising from the struggles of increasing urbanization by offering diverse courses of study designed to prepare students for service in a complex society.

Students majoring in sociology-anthropology go to graduate school seeking higher degrees in sociology, anthropology, public health, hospital administration, social planning, social services, law, and business administration. Some move directly into careers in personnel work, social research, adult and juvenile probation, religious settings and in other fields where knowledge of the interrelationships of society is important.

The department offers a major in sociology-anthropology that leads to a bachelor of arts degree. The department also offers minors in sociology and in anthropology.

The major in sociology/anthropology emphasizes theoretical and applied approaches so that the student can easily move into graduate programs or into career opportunities.

The department also participates in the secondary education certification in social studies offering sociology-anthropology concentrations. Interested students should consult the detailed descriptions in the interdisciplinary section of this catalog.

A sociology-anthropology major requires Sociology 101, 204, 302, 330, 331, 364, and 498; Anthropology 111, 201, and 360; an Anthropology elective; one other elective course in the department; and Mathematics 151*.

The Anthropology minor requires 18 credit hours which include: Sociology 101; Anthropology 111 and 201; two courses selected from Sociology 204, 364, and Anthropology 360; and one course from Anthropology 306, 307, or 308.

The Sociology minor requires 18 hours of course work including Sociology 101, 204, 302, 330, and two Sociology electives.

Sociology

101* Discovering Society

3 credits. **(Social World)** An introductory course to the social world which presents an understanding of society and its impact on the individual. Using the sociological perspective, this course offers students an understanding of social reality, processes, and explanations. Prof. Kanagy.

204* Population and Global Issues

3 credits. **(Social World)** Critical analysis of scholarly and popular views about the relationship of societal processes (including fertility, mortality, and migration) to major social problems (e.g., land degradation, food and water shortages, energy development, and sustainable growth) from the perspectives of sociology and social demography. Prof. Kanagy.

215 Criminology

3 credits. Sociological approaches to the study of crime, with emphasis on current sociological theory and research; special consideration of the judicial system and penology. Alternate fall semesters. Prof. Suknaic.

217 Introduction to the American Criminal Justice System

3 credits. An overview of the criminal justice system in the United States. It examines law, policing, lawyers, judges, court processes, etc. Fall semester, alternate years. Prof. Suknaic.

220 Race and Ethnic Relations

3 credits. Study of racial and cultural minorities in the United States, and their relationship with dominant groups. Includes study of discrimination, prejudice, racial myths, and methods of reducing intergroup tensions. Prof. Kanagy.

265* Hutterites, Mennonites, and Brethren in Modern Society

3 credits. **(Values and Choice)** An introduction to the beliefs, values, and social organization of three religious groups in North America. After profiling each group, the course will explore the consequences of the various choices that these traditional groups have made in their encounter with modernity in the twentieth century. Prof. Kraybill.

301 Social Issues

3 credits. A survey of major social issues, including alienation, addiction, crime, and poverty. Implications for public policy are stressed. Staff.

302 Sociological Theory

3 credits. An examination and analysis of the development of the major classical and contemporary theoretical paradigms in sociology, with an emphasis on examining key concepts and how these have been applied in sociological research. *Prerequisite: Sociology 101.* Fall semester, alternate years. Prof. Lehr.

305 Marriage and the Family

3 credits. A study of the theoretical frameworks for the study of marriage and family patterns and the application of these frameworks to premarital, marital, postmarital and nonmarital aspects of family life in our society. Staff.

317 Sociology of Religion

3 credits. An analysis of the role and function of religion and religious institutions in society; a study of religion as a social and cultural system. Alternate years. Prof. Kanagy.

330 Methods of Social Research

3 credits. Basic procedures of sociological research, including research design, sampling, measurement, and data analysis. *Prerequisite: Sociology 101.* Fall semester, alternate years. Prof. Kanagy.

331 Social Statistics

3 credits. Basic introduction to the study of statistical procedures of social research and analysis, with emphasis on reasoning with data. *Prerequisites: Sociology 330 or Political Science 330 or Social Work 330 and Mathematics 151.* Spring semester, alternate years. Prof. Kanagy.

342 Modern Corrections

3 credits. An overview of the origins, processes, organization, and contemporary trends of corrections for juveniles and adults, including an examination of current issues and alternatives to correctional policies. Alternate spring semesters. Prof. Suknaic.

352 Juvenile Law and Justice

3 credits. An analysis of juvenile crime, delinquency theory, juvenile law, and the components and processes of the juvenile justice system. Spring semester, alternate years. Prof. Suknaic.

358 Sociology of War and Peace

3 credits. A study of the social sources and consequences of war and peace utilizing a cross-cultural perspective with special attention to nuclear deterrence and the systemic forces that contribute to a peaceful world order. Staff.

360 Organizations in Modern Society

3 credits. An examination of the structure, processes, and cultures of formal organizations and their impact on society and individual behavior. Topics include conflict within and between organizations, the development of interorganizational networks, organizational change, and alternatives to bureaucracies. Staff.

361 Anabaptist and Pietist Groups Prior to 1850

3 credits. Introduces the spectrum of groups, noting their origins, core values, communitarian expressions, attempts at ecumenicity, and responses to Indians, war, revival, and revolution. Groups include Brethren, Mennonites, Amish, Inspirationists, Moravians, the Ephrata Community, Methodists, River Brethren, United Brethren in Christ, and Rappites. Fall semester. Staff.

362 Anabaptist and Pietist Groups Since 1850

3 credits. Examines the processes of adaptation, schism, and withdrawal of these groups in response to mainstream cultural and religious movements. Noted are the emergence of old order groups (Amish, Brethren, River Brethren and Mennonite); defensive and accommodation processes among moderate groups including changes in cultural identity symbols and behavior patterns; and contemporary religious expressions. Spring semester. Staff.

363 Pacifism among Anabaptist and Pietist Groups, 1525-1985

3 credits. Examines peace as a common, distinctive feature of Anabaptist and Pietist groups; the problems faced in Pennsylvania by a Quaker pacifist government; the pacifist compromises of Moravians while protecting Indian converts; and the tensions between loyalty promised to the crown and the Revolutionary War. Notes pacifist responses to twentieth century wars, the development of extensive peace and service programs, and the awakening to Civil Rights and justice issues. Probes growing interdenominational and international peace discussions and cooperation in the 1980s. Fall semester. Staff.

364 Amish Society

3 credits. An introduction to the history, culture and social organization of the Old Order Amish. Sociological theories and models utilized by social scientists to describe and analyze the Amish will be presented. Special attention will be paid to recent social changes among the Amish. Prof. Kraybill.

371-379 Special Topics in Sociology

3 credits. Readings and discussion of topical areas of sociology. Topics may include, but not be limited to, the following: evaluation research, population, social inequality, social movements, and political sociology. Staff.

471 Internship

Variable credit. Applied field instruction in a subfield of the discipline chosen to meet the needs of the student. *Prerequisite: permission of instructor.* Staff.

481-489 Independent Study in Sociology

Variable credit. Offers to advanced students the opportunity for independent study, making use of sociological approaches, in areas not included in the regular offerings within the Department. *Prerequisite: permission of instructor.* Staff.

498 Senior Seminar

3 credits. The seminar is an integrative and capstone course. Seniors engage in peer discussion and criticism of theoretical, ethical, and practical issues in sociology. The course requires a senior thesis paper that is presented and defended in a public setting. *Prerequisite: permission of instructor.* Spring semester. Staff.

Anthropology

111* Understanding Human Cultures

3 credits. (**Foreign Cultures and International Studies**) A comprehensive survey of the peoples and cultures of the world with special emphasis upon four interrelated cultural systems: knowledge, technology, social organization, and ideology. Staff.

201* Physical Anthropology

3 credits. (**Natural World**) An introductory course in the study of human beings as physical organisms, their place in nature, their biological development and differentiation, and their early cultural attainments. *Prerequisite: one 100-level Natural World course.* Staff.

202 Cultural Anthropology

3 credits. An introductory course in the study of culture, its nature and characteristic features, with special attention to language, kinship, and religious systems, including a survey of the theories of culture and the methods for studying it. Prof. Lehr.

306 Indians of North America

3 credits. A selective survey of native American groups, past and present, with particular attention given to the prehistoric background, the development of modern aboriginal lifestyles, and contemporary social problems. Staff.

307 Peoples and Cultures of Africa

3 credits. Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of sub-Saharan Africa with special attention to the problems of culture change. Prof. Lehr.

308 Peoples and Cultures of Latin America

3 credits. Ethnographic and cultural analysis of the folk background and contemporary customs of the peoples of Latin America with special attention to the problems of culture change. Prof. Lehr.

360 Cultural Change

3 credits. An examination of how human societies evolve over time, focusing on the sources, patterns, and directions of change. Particular emphasis on the way social institutions, such as the family, change in response to economic development, new technology, and urbanization. Spring semester, alternate years. Prof. Wheelersburg.

371-379 Special Topics in Anthropology

3 credits. Readings and discussion of topics in anthropology chosen in accord with the needs and interests of the participants. Topics will include, but not be limited to, the following: medical anthropology, primitive religion, anthropological theory, and the cultural history of Mexico. Staff.

375 Archaeology Field School

A cooperative program with the State Museum of Pennsylvania designed to provide students with training in excavating techniques, record-keeping, mapping, artifact identification, processing, cataloging, and classification. Requirements include discussing assigned readings and performing laboratory work, in addition to the field investigation. Sites will vary, but will focus on historic sites in Pennsylvania. Summer. Staff.

Spanish

See Department of Modern Languages, page 50.

Theater

See Department of Fine and Performing Arts, page 41.



Interdisciplinary Programs

Premedical and Other Health Professions Programs

James L. Dively, *chair, Health Professions Advisory Committee*

Members: John A. Campbell, Jr., Jack L. Hedrick, Frederic E. Hoffman, Zoe G. Proctor

Training for premedical and related disciplines, such as dentistry, osteopathic medicine, veterinary science, optometry, and podiatric medicine, may be accomplished through several routes. For ease of presentation, from this point on, the term premedical will refer to all health professions, schools, and/or students. *The biology pre-medical concentration* prepares the student through specific requirements that are the same as those for the biology major except as noted on page 20. A second route is the *bachelor of science degree* in biochemistry (see page 20). *Additional routes* of potential interest include a major in most other departments, with sufficient concentration in basic sciences. Most medical schools, however, find that those students who are very well prepared in biology and chemistry make the most attractive candidates, and these majors comprise the overwhelming majority of students accepted. During a student's first year at Elizabethtown College, he or she will follow a curriculum similar to that outlined below, with minor variations depending upon several factors, such as the starting level in English and mathematics. After completion of the freshman year, students should choose an academic major and follow the curriculum for that major in consultation with the appropriate academic advisor and the Health Professions Advisory Committee.

A close working relationship exists between the premedical student and the faculty members who monitor and evaluate the student's academic growth. Five faculty members are currently members of *Elizabethtown's Health Professions Advisory Committee*. The Committee serves the following functions: (1) to work jointly with premedical students and their major advisors to ensure that all prerequisites are met for entry into schools of medicine; (2) to advise students on registration and preparation for medical school admissions tests; (3) to assist students in the preparation and submission of applications to medical schools; (4) to draft a composite letter of evaluation and endorsement for worthy candidates and to forward this

information to the appropriate medical school admissions committees; (5) to offer assistance in preparing for medical school interviews; (6) to solicit and collect literature that will aid students to plan financially for their medical training; and (7) to maintain statistics on medical school placement for advising and administrative purposes.

The premedical student should introduce him or herself to the Health Professions Advisory Committee early in the freshman year and formally register with the Committee shortly after declaring a major. This will normally occur during the fall semester of the sophomore year. Forms for this registration are available from Dr. Dively. At this time, students will find it prudent and beneficial to discuss future course scheduling, long-term career plans, and related matters with Committee members.

Most students need to register for *standard admissions tests*, such as the MCAT, during the early part of spring semester, junior year. After obtaining registration materials, students will seek the Committee's advice regarding the most effective methods of completing their preparation for these extremely important examinations. The majority of the tests are administered during the spring, although the Committee may recommend that a student retake an examination during the fall testing period in an event of initial low scores.

During April of the junior year, the Committee will hold interviews with those students who will be seeking admission to health profession schools. The Committee will use information obtained from the interview to write the letter of evaluation. The Committee will also use information from the student's registration form and from letters of recommendation and endorsement that the student has solicited from three to five individuals, including at least three faculty members. After the Committee receives letters of recommendation and completes the personal interview with the student, the Committee will determine whether or not to prepare a written endorsement of the candidate. If such a letter is written, it will be forwarded, upon receipt of written notice from the student, to the appropriate medical school admissions committee. If the Committee does not choose to endorse the student, the student may solicit other individuals to write letters of evaluation, completing the application process him or herself.

Each spring semester the Committee receives *application service materials* for the various health professions. These materials are distributed to junior premedical students who are expected to complete them during the summer between the junior and senior academic year. Application service materials are normally submitted by the middle of September. After the student has completed and submitted applications to medical school, the Committee will offer assistance in preparing students for medical school interviews. Generally, interviews at medical schools will be held during the fall semester of the senior year. Thus, it is imperative that premedical students notify the Committee of changes in status of their applications so that the Committee can plan for this important stage of the

admission process.

The Committee believes that a strong positive recommendation and endorsement, combined with adequate scores on the requisite standard examinations and outstanding classroom performance, will put the candidate in an excellent position in the highly competitive admissions processes. The *College's placement record* indicates that this belief is well founded. Better than three-fourths of all Elizabethtown College applicants have been accepted (exceeding twice the national average), entering programs of excellent reputation, including those at Jefferson Medical College, Temple University School of Medicine and Dentistry, Philadelphia College of Osteopathic Medicine, Hahnemann Medical College, Pennsylvania State University College of Medicine (Hershey), University of Pittsburgh School of Medicine and Dentistry, University of Pennsylvania School of Veterinary Medicine, and Pennsylvania College of Optometry.

For further information, contact Dr. James L. Dively, chair, Health Professions Advisory Committee.

Representative First-Year Courses

Credits Fall Semester

3	Freshman Seminar
4	Biology 111
4	Chemistry 113
3	Power of Language*
4	Mathematics 121**

Credits Spring Semester

4	Biology 112
4	Chemistry 114
4	Foreign Cultures/International Studies**
4	Mathematics 122**
1	Physical Education

*Placement tests determine starting level.

**Required in chemistry option.

Primary Care Pre-Admissions Program

Elizabethtown College is one of a select group of public and private colleges that is participating in a Primary Care Pre-Admissions Program (PPP), sponsored by the Pennsylvania State University College of Medicine at the Milton S. Hershey Medical Center. The program was established to encourage undergraduate students to pursue careers in internal medicine, family practice, and pediatrics. This program was developed to attract high quality students who have a genuine interest in primary health care. Various programs introduce students to Hershey's primary care mission; identify students who have primary care potential; and provide students with mentoring, primary care, and pre-clinical experience.

Specifically, the Hershey College of Medicine offers the

following: (1) A *Primary Scholars Program*, in which students spend a week at Hershey participating in lectures, seminars, and clinical experiences; (2) a *Primary Care Early Acceptance and Admissions Program*, through which students can apply for admission to the Hershey College of Medicine at the end of the sophomore year of college; (3) a *Primary Care Summer Academic Program* for minority students and students from rural and medically underserved areas, through which the participants pursue studies in basic sciences and gain clinical experience; and (4) a *Primary Care Mentoring Program*, through which students are assigned a mentor, a preceptor, or faculty affiliate of the Hershey College of Medicine, who is located in the same town or regions as the student.

To apply for acceptance into programs, pre-medical students must meet criteria established by the Hershey College of Medicine and apply through the Health Professions Advisory Committee at Elizabethtown College. The Hershey College of Medicine will then select those students who will most benefit from specific components of the the program.

For further information, contact Dr. James L. Dively.

Biology/Allied Health

Bachelor of Science

The College offers a cooperative program with Thomas Jefferson University which leads to a bachelor of science degree in biology from Elizabethtown College and a bachelor of science degree in one of the allied health programs or a master of science degree in physical therapy from Thomas Jefferson University.

The student who undertakes this major gains a wide exposure to the liberal arts through fulfilling the College's general education core and then specializes in professional education at Thomas Jefferson University College of Allied Health Science. The professional programs include areas of cytotechnology, cytogenetics, diagnostic imaging, medical technology, nursing, occupational therapy, and physical therapy.

In this program, the student spends three years at Elizabethtown College, fulfilling the general education core-biology major, and the pre-allied health courses. If accepted, the student then spends two or more years at Thomas Jefferson University in Philadelphia. After completing sufficient credits so that the total with those earned at Elizabethtown College will be at least 125, the student may transfer these credits back to Elizabethtown College and be awarded the bachelor of science degree in biology from Elizabethtown College.

After the student fulfills the remainder of the professional upper division program of clinical experience, Thomas Jefferson University will award the bachelor of science or master of science in one of the allied health areas.

Admission to Thomas Jefferson University is by

application and is based on an evaluation of a student's undergraduate records, letters of recommendation from the department of biology, and interviews.

Students are not limited to Thomas Jefferson University programs. Other Allied Health programs at other institutions of higher education may be used by the student for transfer of credit back to Elizabethtown College. However, these programs need to be approved by the Biology department and by the Registrar prior to the transfer of credit.

For further information, contact Dr. J. Robert Heckman of the biology department.

Forestry and Environmental Management

Bachelor of Science

The College offers a cooperative program with Duke University which leads to a Bachelor of Science degree from Elizabethtown and a Master of Forestry or Master of Environmental Management from Duke. The student who undertakes this major gains a wide exposure to the liberal arts by fulfilling the College's Core Program in addition to courses in the student's major. The student also gains professional training at Duke in such areas as forest productivity, forest management science, resource ecology, water and air resources, resource policy and economics, or other individually tailored programs.

In this program, the student spends three years at Elizabethtown College, fulfilling the Core Program requirements and earning at least 101 credits before transferring to Duke. The student spends at least two years at Duke's School of the Environment. In the first year at Duke, the student completes the undergraduate degree requirements (24 credits) and is awarded the bachelor of science degree from Elizabethtown. After an additional two or three semesters, Duke awards the degree of Master of Forestry or Master of Environmental Management. The program leading to a Master of Forestry Degree from Duke University is accredited by the Society of American Foresters.

In order to prepare students for the professional program at Duke, the College offers a preforestry and environmental management program with major and minor concentrations in biology, business, or political science. While any undergraduate major can be considered for admission to Duke, the student should take at least one year of biology, mathematics, and economics.

Admission to Duke is by application and is based on an evaluation of a student's undergraduate record, Graduate

Record Examination scores, letters of recommendation, and interviews. To effectively compete for acceptance, the applicant's grade point average should be at least 3.50.

There are variations of the schedule herein described. For further information, contact Prof. Ronald L. Laughlin of the biology department.

Majors must complete all Elizabethtown College Core Program requirements. Within the Core areas, the following courses should be taken:

Mathematical Analysis (three credits): Mathematics 151 or 121. If 151 is not taken for core, it is strongly recommended as an elective. If 121 is not taken for core, Math 117 will satisfy the calculus requirement, but not core.

Natural World (eight credits): Biology 111 and Chemistry 101.

Each student completes a major concentration in either biology, business, or political science, and two minor concentrations totaling 18 credits in the other two areas, with at least six credits in each area.

Biology: Major concentration recommendations are Biology 111, 112, 313, 313L, 321; two courses from Biology 215-215L, 235, 331, 332, and 347; and Chemistry 101, and 105. Minor concentration recommendations are Biology 111, 112, 331; if only six credits are elected, they should be Biology 111 and 112.

Business: Major concentration recommendations are Accounting 107, 108, Economics 100, 102, Business Administration 265, 330, 331 and Computer Science 120. Minor concentration recommendations are any combination of Accounting 107, Economics 100, Computer Science 120, Business Administration 265. Economics 100 is, however, strongly suggested.

Political Science: Major concentration recommendations are Political Science 111, 112, 361, 366, 471. Minor concentration recommendations are Political Science 361, 471; if only six credits are elected, they should be Political Science 471.

General Science Certification

Bachelor of Science

Elizabethtown College offers a secondary education certification program in general science which is designed to lead to a general science teaching certificate in secondary education with a major concentration in biology, chemistry, or physics. The program aims to develop a comprehensive background for teachers in order that they

may be better qualified to teach science in the general science curricula of junior high and middle school programs. The requirements of each concentration include a broad exposure to the other sciences and to mathematics, as well as to the instruction and experience in teaching provided by the professional education sequence.

The specific requirements for each of the concentrations follow:

Biology : a minimum of 24 credits in biology which must include Biology 111, 112, 215 and 215L, 313 and 313L; one course selected from Biology 212, 235, 331, 332, 341, 347; one course selected from Biology 321, 324-324L; Chemistry 101*, 105*; Physics 101*, 102; two courses from Earth Science 111, 112, 215 or Physics 212; Mathematics 101 and 121, or 151 and 117 or 121; and Education 205, 230, 305, 310, 415, 473.

Chemistry : a minimum of 24 credits in chemistry which must include Chemistry 113 114, 213, 214; and eight hours from among Chemistry 116, 242, 323, 324, 326, 327, 343, 344, 352, 451; Biology 111*, 112; two courses from Earth Science 111, 112, 215 or Physics 212; Physics 101*, 102; Mathematics 101, 121, 122; and Education 205, 230, 305, 310, 415, and 473.

Physics : Physics 101, 102, 202, 221, 241, 321, and 353; one additional course in physics (except 212) or engineering; Biology 105*-105L*, and either 106*-106L* or 108*-108L*; Chemistry 101*, 105*; two courses from Earth Science 111, 112, 215 or Physics 212; Mathematics 101, 121, 122; and Education 205, 230, 305, 310, 415, and 473.

*Count towards **Natural World** Core Program requirement.

For further information, contact Dr. Frederic E. Hoffman of the biology department.

General Science Minor

The General Science minor offers students the opportunity for study of the natural sciences as a group, based on the view that the natural sciences, together, are the area of secondary interest for the student.

This minor is especially appropriate for, but not limited to, Elementary Education majors with aptitude and interest in the natural sciences. Although some students may wish to complete a minor in a separate science discipline, others may want a wider curricular base and mix in the content they wish to study. The General Science minor provides this while retaining unity and focus. Further, in addition to providing breadth of study of the natural sciences as a group, it allows for a measure of

investigation in depth of a selected discipline.

The minor consists of 25 to 28 credits, including at least 11 credits which may be double counted for the Core Program.

For further information on the minor, contact Dr. Frederic E. Hoffman, clinical professor in science education.

The minor in General Science requires seven courses:

Mathematics (4 credits)
Ma 121 Calculus I

Earth Science (3-4 credits)
ES 111 The Dynamic Earth
or ES 112 The Geology of Landscape
or ES 215 Meteorology

Physics (4 credits)
Phy 101 Physics I
or Phy 212 Astronomy

Chemistry (4 credits)
Ch 101 General Chemistry: Practical Principles
or Ch 105 General Chemistry:
Theoretical Principles
or Ch 107 The Chemistry of Life: Energy
or Ch 113 Organic Chemistry I

Biology (4 credits)
Bio 105/105L Principles of Biology w/Lab
or Bio 106/106L Genetics, Evolution,
and Man w/Lab
or Bio 108/108L Living with the Environment
w/Lab
or Bio 111 Introduction to
Biological Sciences

Two elective courses (3-4 credits each)
in the same or different disciplines, chosen from any
Biology, Chemistry, Earth Science, and Physics *above*
100-level (or *at* 100-level if the elected course has a
prerequisite in the same discipline).

Social Studies Certification

Bachelor of Science

In the social studies certification program, the student acquires a mastery of the various subject fields that are a part of a social studies curriculum. In addition, the program provides training in the techniques of teaching, along with actual teaching experience in a social studies classroom. Upon successful completion of the program, students are certified to teach social studies in secondary

schools in Pennsylvania and, by reciprocal arrangements, in several other states.

The academic segment of the student's preparation calls for specified courses in economics, history, political science, psychology, and sociology/anthropology. This background enables the student to prepare for teaching in all areas classified as the social studies in secondary schools. The student concentrates in depth in one of the areas. This concentration encourages thoroughness in understanding one area and also lays the groundwork for future graduate study in that subject.

Professional training in the skill of teaching is acquired through a college course on methods. The student explores both the theory and the practical strategies of teaching. Finally, the student spends a semester actually teaching social studies in a secondary school classroom under the careful supervision of a competent secondary school teacher and a college professional who offer criticism, advice, and encouragement.

For additional information, contact Dr. Richard Mumford of the history department.

Requirements for the social studies major are: Students must take one 24-hour major, and two courses in each of the four cognate areas. These two courses in each of the four cognate areas may duplicate courses in the core areas. All students must take the professional education sequence Education 205, 230, 305, 415, and 473. Consultation with your advisor is suggested for appropriate courses in the subject matter areas. The student must have a 2.5 grade point average for admission to the certification program.

Economics : The 24-credit major must include Economics 101, 102, and 18 elective credits in economics.

History : The 24-credit major must include History 115, 201, 202, 390, one European history course beyond 115; one non-United States, non-European history course, and six elective credits in history.

Political Science : The 24-credit major must include Political Science 111, 112, 223 or 224, 245, 330, 351, and six elective credits in political science.

Psychology : The 24-credit major must include Psychology 105, 106, 213, 221, 225, 235, 321, and one elective in Psychology.

Sociology/Anthropology : The 24-credit major must include Sociology 101, 204, 302, and 330; Anthropology 111; and nine credits planned in consultation with and approved by the social studies advisors in the Departments of Sociology-Anthropology and Education.

Anabaptist and Pietist Studies Minor

The interdisciplinary minor in Anabaptist and Pietist Studies consists of 18 credits. The curricular model incorporates three types of courses: a required introductory course (3 credits); elective courses in a variety of disciplines (12 credits); and a capstone seminar research project (3 credits). Courses in the minor may not count toward a student's academic major.

The introductory course (Rel 225) is designed to orient students to the European historical and theological roots of the Anabaptist and Pietist movements. The elective courses, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which draws on the resources of three academic disciplines. The *capstone course* (Sociology 265*) is a seminar experience which requires students to integrate and synthesize the insights from several disciplines in a major research writing project. At least two faculty members from differing academic disciplines will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the religious studies department.

For further information, contact Dr. William V. Puffenberger of the religious studies department.

Minor Requirements

- A. One *required* introductory course (3 credits)
Rel 225 Anabaptist and Pietist Movements
- B. Four *elective* courses from the following list (12 credits)
 - Rel 230 Religion in America
 - Rel 335/His 315 Renaissance and Reformation History
 - Rel/Soc 361 Anabaptist and Pietist Groups to 1850
 - Rel/Soc 362 Anabaptist and Pietist Groups since 1850
 - Rel/Soc 363 Pacifism Among Anabaptist and Pietist Groups
 - Rel/Soc 364 Amish Society
- C. One *required* capstone research seminar (3 credits)
Soc 265* Anabaptist and Pietist Groups in Modern Society

Peace and Conflict Studies Minor

The interdisciplinary minor in Peace and Conflict Studies consists of 18 credits. The curricular model incorporates three types of courses: required introductory courses (6 credits); elective courses in a variety of disciplines (9 credits); and a capstone, integrative seminar research project (3 credits). Courses in the minor may not count toward a student's academic major.

In order to provide students with adequate conceptual tools and conciliation skills, the program of study is multidisciplinary in both method and instruction. The *introductory courses* orient students to basic concepts and approaches in Peace and Conflict Studies as well as the history of nonviolence. The *elective courses*, selected from specified courses in several disciplines, enable students to shape a personal program of emphasis which taps the analytic resources of various academic fields. The *capstone course elective* requires students to synthesize concepts and knowledge from several disciplines in order to address a research problem of practical or theoretical interest. At least two faculty members, representing different academic fields, will read and evaluate the research paper.

A committee of faculty representatives from the cooperating departments elects a chairperson who oversees the operation of the minor. Administrative responsibilities for the supervision of the minor resides with the chairperson of the Department of Religious Studies.

For further information, contact Dr. William V. Puffenberger of the religious studies department.

Minor Requirements

- A. Two *required* introductory courses (6 credits)

Rel 165	Introduction to Peace and Conflict Resolution
Hi 221	History of Nonviolence
- B. Three *elective* courses from the list below, or other approved courses (9 credits). No more than two elective courses shall be chosen from any one department. At least two of the elective courses must be taken outside the student's major department.

Psy 235	Social Psychology
Psy 321	Theories of Personality
Rel 310	Biblical Perspectives on Peace and Justice
Rel 351	Religion and Violence
Rel 379	Power and Mediation
Soc 358	Sociology of War and Peace
Soc/Rel 363	Pacifism Among Anabaptist and Pietist Groups

- C. A required *capstone* seminar designed to integrate previous work and culminate in a major research paper.

Rel 465

Directed Research Project

International Studies Minor

The International Studies minor comprises a cluster of foreign culture, language, and international affairs courses with a largely contemporary focus. Serving as a complement to the academic major, this minor provides the student with enhanced understanding of the conditions in the rest of the world which are making themselves felt in the daily lives of Americans. In addition to the general liberal arts goal of broadening students' horizons of awareness of other peoples and places, the minor offers a valuable complementary education for many career-oriented and preprofessional programs of study.

The Department of Business has an International Business major and concentration. Details of these options can be obtained from the Business department faculty.

The minor provides three principal categories of an international education: competency in a second language, knowledge of other cultures, and appreciation of global interdependence among nations.

For further information, contact Dr. Wayne A. Selcher, director of international studies and program advisor.

The structure of the minor consists of:

1. *Foreign language competency*: six credits in oral and written communication through language and culture beyond the Modern Language 112 level, with an oral proficiency rating of Intermediate High/Level I+ on the ACTFL/ETS scale.
2. *Three required foundation courses* (9 credits):

An 111	Understanding Human Cultures
Ec 307	International Economics* or
Ec 311	Economic Development or
Ec 312	International Political Economy
	(only one economics course may be selected)
PS245	International Relations
3. *Four elective courses* (12 credits) to be chosen from this list:

An 202	Cultural Anthropology
An 307	Peoples and Cultures of Africa
An 308	Peoples and Cultures of Latin America
BA 251	Cross Cultural Understanding and Interaction
BA 317	International Marketing
BA 337	International Legal Environment
BA 367	International Management

Com 372	International Communications
Ec 307	International Economics*
Ec 308	Comparative Economic Systems*
Ec 311	Economic Development
Ec 312	International Political Economy
Fr/Ge/Sp 311	Making of Modern Society
Sp 312	Language for the Professions
Hi 205	Modern Far East
Hi 216	Modern Britain
Hi 218	Europe in the Twentieth Century
Hi 220	History of the Soviet Union
Hi 227	History of Africa
Hi 323	History of China
Hi 324	History of Japan
Hi 328	Modern Africa
Hi 403	A History of United States Foreign Relations
Mu 205	Music of Non-Western Cultures
PS 252	Latin American Society
PS 345	American Foreign Policy
PS 348	Public International Law
PS 351	Comparative Politics
Rel 221	Western Religions
Rel 222	Eastern Religions

Also: 370 courses which are approved by the International Studies Committee.

*Prerequisite: Ec 100

In developing the minor, the student can choose electives to develop a thematic emphasis, such as regions of the world (e.g., Asia, developing nations), relations among nations, or a comparative or disciplinary perspective (e.g., on civilizations, religions, economics or politics). Study abroad is strongly encouraged. The director of International Studies (Dr. Wayne A. Selcher) will help the student with course selections. Completion of the minor is indicated on a student's transcript.

Pre-Law Program

Chair of the Pre-law Committee: H. Herbert Poole (History).

Members of the Committee: Paul Gottfried (*Political Science*), George A. Gliptis (*Business*), Anthony M. Matteo (*Philosophy*), E. Fletcher McClellan (*Political Science*), W. Wesley McDonald (*Political Science*), Richard L. Mumford (History).

Because the training of a pre-law student may be accomplished in almost any academic discipline, such as English, History, Political Science, Philosophy, or Business, a committee has been established to assist the pre-law student during his undergraduate years.

The Pre-Law Committee works with the pre-law student and the student's major advisor to ensure that a reason-

able and sound course of study is followed that is acceptable for entry into a school of law. The committee aids the student in selecting a suitable school, and advises the applicant on the registration and the preparation for the Law School Admissions Test (LSAT). The committee guides the preparation and submission of applications and supervises the requests for letters of recommendation for worthy candidates.

In order to create the most effective curriculum, the pre-law student should introduce himself to the Pre-Law Committee early in the freshman year to discuss future course scheduling and long-term plans.

The Pre-Law Committee also supervises the activities of the Law Club and works closely with the campus Forensic Team; both activities are highly recommended for pre-law students.

Over the years, the members of the committee have maintained a liaison with the schools of law which are most frequently attended by Elizabethtown College graduates. These include: American University, Antioch College, University of Baltimore, Boston University, University of Bridgeport, Case Western Reserve University, University of Dayton, University of Delaware, Dickinson College, Duke University, Duquesne University, Fordham University, Georgetown University, George Washington University, Hofstra, University of Miami, University of Nebraska, New York Law School, New York University, Ohio Northern University, Oklahoma, Pace, University of Pennsylvania, Pepperdine, Pittsburgh, Rutgers, Saint Mary's University of San Antonio, Syracuse, Temple, University of Toledo, Valparaiso, Vermont Law School, Villanova, Washington and Lee, and William and Mary.

For further information, contact Dr. H. Herbert Poole, chair of the pre-law committee.

Public Administration Minor

The public administration minor provides knowledge, skills, and experience to students desiring a career in public service. Combined with an appropriate academic major, the minor prepares students for careers in public management, public policy analysis and administration, legislative affairs, urban and regional planning, international development administration, and related fields. In particular, the minor is designed to provide a necessary background for students who intend to pursue graduate study in public affairs.

The requirements of the minor reflect the interdisciplinary nature of governmental activity. The courses introduce the student to: (1) the political, economic, and organizational environment of the public administrator; and (2) the major activities, responsibilities, and roles of public administrators. An important component of the minor is participation in the Capital Semester Internship Program (Political Science 471), which furnishes intern-

ship opportunities with state and local government agencies.

The minor is available to all students except political science majors, who may elect a concentration in public administration within the major. The required courses in the minor are: Economics 101; Political Science 111 or 351, 361, and 471; Business Administration 376; and Sociology 360. Students interested in working for federal, state, or local governments in the United States should take Political Science 111, while students who want to pursue public-sector work outside the U.S. should take Political Science 351. With the exception of Economics 101, courses in the minor may not count toward a student's academic major.

For further information, contact Dr. E. Fletcher McClellan of the political science department.



Human Services Minor

A minor in Human Services, consisting of a minimum 18 credits, is available. The minor provides students the knowledge, values, and skills to explore society's social problems and the intricate social welfare system designed to assist people in need. It also provides the student with an overview of human behavior, social problems, and the development of American social welfare institutions.

All students, except Social Work majors, may pursue this minor.

For further information, contact Professor Link Martin of the social work department.

Minor Requirements (12 credits):

SW 151	Social Welfare Issues in Contemporary Society
SW 180	Interpersonal Helping Skills
SW 233	Human Behavior in the Social Environment
SW 280	Rural and Urban Social Welfare Systems

Also (6 credits):

A minimum of six elective credits of the following courses (three credits of which must be outside of the Department of Social Work):

SW 339	Human Sexuality
SW 344	Aging: Social Response and Implication
SW 355	Women in Society
SW 357	Child Welfare
SW 366	Addiction and Society
SW 401	State and National Social Welfare Systems
Mu 353	Music Therapy Techniques (2 credits)
Psy 334	Exceptional Children and Youth
Psy 401	Counseling Psychology
Soc 305	Marriage and the Family
Soc 342	Modern Corrections
PS 361	Public Administration
OT 320	Health Care Systems
OT 325	Sign Language (2 credits)
BA 376	Decision Making for the Public Sector

All courses receive three credits awarded upon successful completion, unless otherwise noted.

Directory

The Faculty

Gerhard E. Spiegler, *President, Professor of Philosophy*
D.B., M.A., Ph.D., University of Chicago (1985)

Frederick F. Ritsch, *Provost, Dean of the Faculty, Professor of History*
B.A., M.A., Ph.D., University of Virginia (1984)

Richard R. Crocker, *Dean of College Life and Associate Professor of Religious Studies* (1990)
B.A., M.A., Brown University; M.Div., Ph.D., Vanderbilt University (1990)

Emeriti

Edgar T. Bitting, *Edgar T. Bitting Professor of Accounting Emeritus*
B.S., Elizabethtown College; M.B.A., University of Pennsylvania; C.P.A.; LL.D., Elizabethtown College (1952-1984)

Louise B. Black, *Associate Professor of English Emerita*
B.S., Elizabethtown College; M.S., Temple University (1968-1988)

I.L. Bossler, *Professor of Mathematics Emeritus*
B.S., Ursinus College; M.S., Purdue University (1959-1989)

Stanley Bowers, *Associate Professor of Education Emeritus*
B.S., Millersville State College; M.Ed., Temple University (1965-1990)

Carl J. Campbell, *Professor of English Emeritus*
A.B., Franklin and Marshall College; M.A., University of Pennsylvania (1962-1978)

Anna M. Carper, *Director of the Library Emerita*
A.B., Elizabethtown College; M.S., Columbia University (1960-1986)

Hubert M. Custer, *Associate Professor of Physics Emeritus*
B.S., Carnegie Institute of Technology; M.S., Franklin and Marshall College (1953-61, 1963-1986)

Robert D. Dolan, *Associate Professor of Mathematics Emeritus*
B.S., California State College; M.A., West Virginia University (1964-1992)

Mark C. Ebersole, *President Emeritus*
B.S., LL.D., Elizabethtown College; B.D., Crozer Theological Seminary; M.A., University of Pennsylvania; Ph.D., Columbia University (1977-1985)

Charles S. Farver-Apgar, *Professor of Biology Emeritus*
B.S., M.S., Ph.D., University of Pittsburgh (1945-1967)

Elizabeth M. Garber, *Professor of Political Science Emerita*
A.B., LL.D., Hood College; M.A., George Washington University; Docteur de l'Universite, University of Paris (1966-1973)

Robert B. Garrett, *Assistant Professor of Health and Physical Education Emeritus*
B.S., East Stroudsburg State Teachers College; Ed.M., Temple University (1967-1988)

Vera R. Hackman, *Dean of Women Emerita*
A.B., Elizabethtown College; A.M., Columbia University; Professional Diploma, Teachers' College, Columbia University; L.H.D., Elizabethtown College (1944-1973)

Kathryn Nisley Herr, *Associate Professor of Modern Languages Emerita*
A.B., Lebanon Valley College (1943-1969)

Earl H. Kurtz, *Treasurer Emeritus*
B.S., Elizabethtown College; M.A., New York University; Ped.D., Elizabethtown College (1957-1978)

Henry M. Libhart, *Professor of Art Emeritus*
A.B., Franklin and Marshall College; Equivalent Master's Degree certificate, Commonwealth of Pennsylvania (1959-64, 1967-91)

J. Henry Long, *Associate Professor of Sociology Emeritus*
B.S., Elizabethtown College; M.A., Temple University; B.D., D.D., Bethany Theological Seminary (1969-1988)

Morley J. Mays, *President Emeritus*
A.B., Juniata College; A.M., University of Pittsburgh; Ph.D., University of Virginia; D.D., Bethany Theological Seminary; LL.D., Elizabethtown College; L.H.D., Albright College (1966-1977)

Donald L. Neiser, *Registrar Emeritus*
B.S., Elizabethtown College (1967-1986)

Rollin E. Pepper, *Professor of Biology Emeritus*
A.B., Earlham College; M.S., Syracuse University; Ph.D., Michigan State University (1964-1990)

Elisabeth D. Shaw Russell, *Associate Professor of English Emerita*
B.A., M.A., Oxford University (1969-1988)

Carl N. Shull, *Professor of Music Emeritus*
B.S., Bridgewater College; M.M., Northwestern University; Ph.D., Florida State University (1961-1988)

Harry L. Simmers, *Associate Professor of Music Emeritus*
B.S., Bridgewater College; M.M., American Conservatory of Music (1966-1990)

Donald P. Smith, *Assistant Professor of Physical Education Emeritus*
B.S., University of Mississippi (1954-64, 1972-88)

Royal E. Snavelly, *Counselor Emeritus*
M.A., Ohio State University (1965-1990)

Armon C. Snowden, *Professor of Religion and Philosophy Emeritus*
A.B., Elizabethtown College; B.D., Crozer Theological Seminary; (1957-1986)

Martin O. L. Spangler, *Professor of Chemistry Emeritus*
B.A., Bridgewater College; M.S., Ph.D., Virginia Polytechnic Institute (1966-1993)

Stanley T. Sutphin, *Professor of Philosophy Emeritus*
A.B., La Verne College; B.D., Bethany Theological Seminary; Th.D., Pacific School of Religion (1963-1993)

Robert S. Young, *Director of Special Gifts Emeritus* (1950-1984)

Robert E. Ziegler, *Professor of Science Education Emeritus*
B.A., Bridgewater College; M.R.E., Bethany Seminary; M.S., Ph.D., University of Wisconsin (1966-1988)

The remaining faculty member listings indicate two dates. The date listed following the person's academic rank indicates date of appointment or promotion to that rank. The date listed following the institution at which the person earned degrees indicates the date of original appointment to the faculty.

Professors

Ernest A. Blaisdell, Jr., *Professor of Mathematics*, (1980)
B.A., M.A., University of Maine; Ph.D., Temple University (1968)

Jay Buffenmyer, *Professor of Business* (1987)
B.S., Elizabethtown College; M.P.I.A., Ph.D., University of Pittsburgh (1976)

John A. Campbell, Jr., *Professor of English* (1970)
B.S., M.A., Ph.D., University of Florida (1968)

Eugene P. Clemens, *Professor of Religion* (1973)
B.A., Goshen College; M.A., Ph.D., University of Pennsylvania (1965)

Paul M. Dennis, *Professor of Psychology* (1992)
B.A., Bowdoin College; M.A., Ph.D., New
School for Social Research (1968)

James L. Dively, *Professor of Biology* (1985)
B.S., M.S., Ph.D., Pennsylvania State
University (1973)

Darrell R. Douglas, *Professor of Music* (1994)
B.S., University of Minnesota; M.A., Arizona
State University; D.M.A., University of
Southern California (1972)

J. Thomas Dwyer, *Professor of English* (1968)
A.B., M.A., Ph.D., University of Pennsylvania
(1960)

Delbert W. Ellsworth, *Professor of Psychology*
(1988)
A.B., University of California; M.A., San
Francisco State College; Ph.D., University
of California (1970)

John F. Gelson, *Sara Lodge Distinguished
Visiting Professor of Business* (Fall 1994)
B.S., University of Notre Dame (1993)

Paul Gottfried, *Professor of Humanities*
(1989)
A.B., Yeshiva University; M.A., Ph.D., Yale
University (1989)

John F. Harrison, *Professor of Music* (1985)
B.M., M.M., Florida State University; Ph.D.,
Bryn Mawr College (1967)

J. Robert Heckman, *Professor of Biology*
(1978)
B.S., Elizabethtown College; M.Ed.,
Millersville State College; Ph.D.,
Pennsylvania State University (1964)

Jack L. Hedrick, *Professor of Chemistry* (1973)
B.S., Elizabethtown College; M.S., University
of Pittsburgh (1963)

Frederic E. Hoffman, *Professor of Biology,
Clinical Professor in Science Education*
(1982)
B.A., M.S., Ph.D., Syracuse University
(1969)

Otis D. Kitchen, *Professor of Music* (1987)
B.S., Bridgewater College; M.M., Northwest-
ern University (1965)

Donald E. Koontz, *Professor of Mathematics*
(1970)
B.S., Juniata College; M.A., Pennsylvania
State University; Ed.D., Temple Univer-
sity (1961)

Donald B. Kraybill, *Carl W. Zeigler Professor
of Religion and Philosophy* (1994);
Professor of Sociology (1984) and *Director
of the Galen and Jessie B. Young Center for
the Study of Anabaptist and Pietist Groups*
B.A., Eastern Mennonite College; M.A.,
Ph.D., Temple University (1971)

Carroll L. Kreider, *Professor of Business*
(1989)
B.S., Elizabethtown College; M.Ed.,
Pennsylvania State University (1969)

J. Kenneth Kreider, *Professor of History*
(1972)
A.B., Elizabethtown College; M.A., Ph.D.,
Pennsylvania State University (1964)

Robert C. Moore, *Professor of Communica-
tions* (1989)
B.S., Edinboro State College; M.S., Clarion
State College; Ed.D., West Virginia
University (1983).

Richard L. Mumford, *Professor of History and
Clinical Professor in Social Studies
Education* (1971)
A.B., University of Pennsylvania; M.Ed.,
Ph.D., University of Delaware (1965)

Zoe G. Proctor, *Professor of Chemistry and
Director of Medical Technology Program*
(1970)
B.S., Elizabethtown College; M.S., Bucknell
University (1959)

William V. Puffenberger, *Professor of
Religion* (1974)
B.A., Bridgewater College; B.D., Bethany
Theological Seminary; Ph.D., Boston
University (1967).

John P. Ranck, *Professor of Chemistry* (1969)
B.S., Elizabethtown College; M.A., Ph.D.,
Princeton University (1963)

D. Paul Rice, *Professor of Education* (1971)
A.B., Elizabethtown College; M.S., Ed.D.,
Temple University (1963)

Carmine T. Sarracino, *Ralph W. Schlosser
Professor of English* (1991)
B.A., Rhode Island College; M.A., Ph.D.,
University of Michigan (1973)

Charles D. Schaeffer, Jr., *A.C. Baugher
Professor of Chemistry* (1991)
B.A., Franklin and Marshall College; Ph.D.,
State University of New York at Albany
(1976)

Wayne A. Selcher, *College Professor of
International Studies and Director of the
International Studies Program* (1982)
A.B., Lebanon Valley College; M.A., Ph.D.,
University of Florida (1969)

Ronald L. Shubert, *Professor of Mathematics*
(1973)
B.S., Elizabethtown College; M.A., Univer-
sity of Kansas; Ed.D., Pennsylvania State
University (1964)

Bela Vassady, Jr., *Horace E. Raffensperger
Professor of History* (1983)
B.S., Pennsylvania State University; M.A.,
Ph.D., Temple University (1971)

Thomas R. Winpenny, *Professor of History*
(1981)
B.A., M.A., Pennsylvania State University;
Ph.D., University of Delaware (1968)

Associate Professors

Jill Sunday Bartoli, *Associate Professor of
Education* (1990)
B.A., M.A., University of Kentucky; M.Ed.,
Shippensburg State College; Ph.D.,
University of Pennsylvania (1990)

Vivian R. Bergel, *Associate Professor of Social
Work* (1993)
B.A., M.S.W., West Virginia University;
Ph.D., University of Maryland at
Baltimore (1987)

Cynthia Beyerlein, *Associate Professor of
Public Administration* (1992)
B.S., Manchester College; M.B.A., St.
Francis College; M.S. Widener University
(1985)

Paula R. Boothby, *Associate Professor of
Education* (1990)
A.B., Kalamazoo College; M.A., Western
Michigan University; Ed.D., University of
North Dakota (1990)

Christina A. Bucher, *Associate Professor of
Religion* (1994)
A.B., Elizabethtown College; M.A.Th.,
Bethany Theological Seminary, Ph.D.,
Claremont Graduate School (1988)

Uldis Daiga, *Associate Professor of Modern
Languages* (1973)
B.S., University of North Carolina; M.A.,
Temple University (1965)

Martha A. Eppley, *Associate Professor of
Economics* (1971); *Associate Dean of the
Faculty and Registrar* (1979)
B.S., Elizabethtown College; M.B.A., Indiana
University (1964)

Hugh G. Evans, Jr., *Associate Professor of
Economics* (1971)
B.S., Juniata College; M.A., Pennsylvania
State University (1968)

Boyd Fox, *Associate Professor of Education*
(1973)
B.S., M.S., Ed.D., Utah State University
(1970)

Milton Friedly, *Associate Professor of Art*
(1994)
A.A., Northwest Community College; B.F.A.,
Arizona State University; M.F.A.,
University of Wyoming (1987)

George A. Gliptis, *Associate Professor of
Business* (1972)
B.S., J.D., University of Virginia (1970)

Suzanne Schmidt Goodling, *Associate
Professor of Modern Languages* (1970)
B.A., Gettysburg College; M.A., Middlebury
College (1964)

Maurice R. Hoppie, *Associate Professor of
Economics* (1987)
B.A., Knoxville College; M.S., Ph.D.,
University of Tennessee (1980)

- Jacqueline L. Jones**, *Associate Professor of Occupational Therapy* (1987)
B.S., Milwaukee-Downer College; M.S., Florida International University; Ph.D., University of Illinois at Urbana/Champaign, OTR/L (1987)
- Yvonne E. Kauffman**, *Associate Professor of Physical Education* (1990)
B.S., Bridgewater College; M.Ed., West Chester State College (1966)
- John E. Koontz**, *Associate Professor of Mathematics* (1970)
B.S., Juniata College; M.A., Bowling Green State University (1966)
- Ronald L. Laughlin**, *Associate Professor of Biology* (1972)
B.A., Wabash College; M.S., Ohio State University (1968)
- Thomas R. Leap**, *Associate Professor of Computer Science* (1985)
B.S., Elizabethtown College; M.S., Ph.D., Lehigh University (1979)
- R. Bruce Lehr**, *Associate Professor of Sociology* (1966)
A.B., Bucknell University; M.A., Mexico City College (1961)
- Louis F. Martin**, *Associate Professor of English* (1994)
B.A., The University of the South; M.S., The University of Southern Mississippi; M.A.T., Ph.D., University of North Carolina, Chapel Hill (1988)
- Anthony M. Matteo**, *Associate Professor of Philosophy* (1991)
B.A., M.A., LaSalle College; Ph.D., Temple University (1986)
- E. Fletcher McClellan**, *Associate Professor of Political Science* (1989)
B.A., Franklin and Marshall College; M.A., East Tennessee State University; Ph.D., The University of Tennessee (1982)
- W. Wesley McDonald**, *Associate Professor of Political Science* (1986)
B.A., Towson State College; M.A., Bowling Green State University; Ph.D., Catholic University of America (1980)
- Robert K. Morse**, *Associate Professor of Mathematics* (1971)
B.S., Franklin and Marshall College; M.A., Temple University (1968)
- Stanley R. Neyer**, *Associate Professor of Business* (1972)
B.S., Elizabethtown College; M.B.A., Shippensburg State College; C.P.A. (1964)
- D. Kenneth Ober**, *Associate Professor of Physical Education and Director of Athletics* (1972)
B.S., M.S., West Chester State College (1964)
- Jane E. Palmquist**, *Associate Professor of Music* (1994)
B.M.E., Northern State College; M.M., Ph.D., University of Texas at Austin (1990)
- Frank P. Polanowski**, *Associate Professor of Biology* (1981)
B.S., Wilkes College; M.Ed., Ph.D., Pennsylvania State University (1977)
- H. Marshall Pomroy**, *Associate Professor of Business* (1971)
B.S., Elizabethtown College; M.Ad., Pennsylvania State University; C.P.A. (1964)
- H. Herbert Poole, Jr.**, *Associate Professor of History* (1982)
B.A., Franklin and Marshall College; M.A., University of Pennsylvania; Ph.D., University of Delaware (1969)
- Raymond R. Reeder**, *Associate Professor of Chemistry* (1973)
B.S., Case Institute of Technology; Ph.D., Brown University (1969)
- John C. Rohrkemper**, *Associate Professor of English* (1987)
B.A., M.A., Ph.D., Michigan State University (1981) Sabbatical leave, Fall 1994
- Donald E. Smith**, *Associate Professor of Communications* (1973)
B.S., M.S., State University of New York College at Geneseo (1969)
- John W. Stites**, *Associate Professor of Music* (1976)
B.S., Manchester College; M.M., Wayne State University (1968)
- Richard G. Stone**, *Associate Professor of Business* (1987)
B.A., Lebanon Valley College; M.S., Franklin and Marshall College; M.B.A., University of Connecticut; Ph.D., Temple University (1987)
- William M. Stuckey**, *Associate Professor of Physics* (1993)
B.S., Wright State University; M.S., Ph.D., University of Cincinnati (1988)
- John A. Teske**, *Associate Professor of Psychology* (1990)
B.A., Indiana University; M.A., Ph.D., Clark University (1986)
- Glenn H. Thompson, Jr.**, *Associate Professor of Earth Science* (1973)
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University (1969)
- Sharon R. Trachte**, *Associate Professor of Modern Languages* (1993)
B.A., Muskingum College; M.A., University of Kentucky; Ph.D., State University of New York at Binghamton (1986)
- Randolph L. Trostle**, *Associate Professor of Business* (1984)
B.S., Elizabethtown College; M.Ed., M.B.A., Shippensburg State College; Ph.D., Lehigh University (1972)
- Barbara C. Tulley**, *Associate Professor of Computer Science* (1989)
B.S., St. Bonaventure University; M.S., Worcester Polytechnic Institute (1974)
- Hans-Erik Wennberg**, *Associate Professor of Communications* (1992)
B.S., State University College at Geneseo; M.Ed., Temple University; Ph.D., University of Connecticut (1984)

Assistant Professors

- Kurt M. Barnada**, *Assistant Professor of Modern Languages* (1988)
B.A., West Chester University; M.A., West Virginia University; Ph.D., Georgetown University (1988)
- David A. Bauman**, *Assistant Professor of Education* (1988)
B.A., Goshen College; M.Ed., Millersville University (1988)
- Morteza Bina**, *Assistant Professor of Computer Science* (1990)
B.S., Arya Mehr University of Technology; D.E.A., Institut National Polytechnique de Grenoble; M.S., Bowling Green State University; Ph.D., Université de Technologie de Compiègne (1990) Leave of Absence, 1994-95
- Terry Blue**, *Assistant Professor of Education* (1990)
B.A., Juniata College; M.A., Temple University; Ph.D., Pennsylvania State University (1990)
- Jane F. Cavender**, *Assistant Professor of Biology* (1994)
B.A., University of Delaware; M.S., Ph.D., Pennsylvania State University (1994)
- Carolyn F. Dillon**, *Assistant Professor of Psychology, part-time* (1992)
B.A., M.A., Ph.D., University of Delaware (1992)
- Maria H. Frawley**, *Assistant Professor of English* (1992)
B.A., Bucknell University; M.A., Ph.D., University of Delaware (1992)
- Margaret Larson French**, *Visiting Professor of Computer Science* (1994)
B.S., M.S., Ph.D., Lehigh University (1994)
- Thomas E. Hagan, Jr.**, *Assistant Professor of Chemistry* (1993)
B.S., Villanova University; Ph.D., University of Delaware (1993)
- Patricia A. Hill**, *Assistant Professor of Business* (1988)
B.A., Gettysburg College; M.B.A., University of Baltimore (1988)

James W. Hunter, Jr., *Assistant Professor in Theater and Technical Director of Theater* (1994)
B.A., University of North Carolina-Asheville;
M.F.A., University of Virginia (1991)

Conrad L. Kanagy, *Assistant Professor of Sociology* (1994)
B.A. Wheaton College; M.S., Pennsylvania State University (1994)

Catherine E. Lemley, *Assistant Professor of Psychology* (1993)
B.A., Columbus College; M.A., Ph.D., Northeastern University (1993)

Link Martin, Jr., *Assistant Professor of Social Work and Director of Field Instruction* (1988)
B.S., Murray State University; M.S.W., University of Hawaii (1988)

Margaret McFarland, *Assistant Professor of Social Work, part-time* (1990)
B.S.W., Lock Haven University; M.S.W., Marywood School of Social Work; Ph.D., University of Maryland at Baltimore (1990)

Dana Gulling Mead, *Assistant Professor of English* (1989)
B.A., M.A., University of Tennessee, Knoxville; Ph.D., Texas Christian University (1989)

Thomas E. Murray, *Assistant Professor of Biology* (1994)
B.A., College of the Holy Cross; M.S., Ph.D., University of Connecticut (1994)

Donald G. Muston, *Assistant Professor of Business* (1977)
B.S., M.B.A., Indiana University; B.I.M., American Graduate School of International Management (1977)

Elizabeth A. Rider, *Assistant Professor of Psychology* (1988)
B.A., Gettysburg College; M.S., Ph.D., Vanderbilt University (1988)

Michael J. Rohrbacher, *Assistant Professor of Music Therapy* (1989)
B.M., East Carolina University; M.S., Johns Hopkins University; Ph.D., University of Maryland (1989)

Gabriela R. Sanchis, *Assistant Professor of Mathematics* (1991)
B.S., Syracuse University; M.A., Ph.D., University of Rochester (1991)

Michael Severeid, *Assistant Professor of Theater* (1990)
A.B., Middlebury College; M.A., Central Missouri State University (1990)

Michael Silberstein, *Assistant Professor of Philosophy* (1994)
B.A., M.A., Ph.D., University of Oklahoma (1994)

Bobette H. Thorsen, *Assistant Professor of Mathematics* (1993)
B.A., Brown University; M.S., Montana State University; Ph.D., University of California, Santa Cruz (1993)

Juan A. Toro, *Assistant Professor of Education* (1992)
B.S., Catholic University of Puerto Rico; M.S., Western Illinois University; Ph.D., Pennsylvania State University (1992)

Robert P. Wheelersburg, *Assistant Professor of Anthropology, Assistant Dean of the Faculty* (1989)
B.A., Ohio State; A.M., Ph.D., Brown University (1989) Fulbright leave, Fall 1994

Joseph A. Whitmore, *Assistant Professor of Physical Education* (1977)
B.A., Bridgewater College (1968)

Instructors

Catherine Clark, *Instructor in Occupational Therapy* (1993)
B.S., M.S., Thomas Jefferson University; OTR/L (1993)

Leota E. Dye, *Instructor in Communications* (1992)
A.A., Hutchinson Community College; B.S., M.A., Kansas State University (1992)

Lois K. Herr, *Visiting Instructor in Marketing* (1993)
B.A., Elizabethtown College; M.A., University of Pennsylvania; M.B.A., Fordham University (1993)

Angela M. Salvadia, *Part-time Instructor and Director of Field Placements in Occupational Therapy* (1994)
B.S., Elizabethtown College; M.S., Boston University; OTR/L (1994)

Lou Ellen Schellenberg, *Instructor in Art* (1992)
B.A., Framington State College; Diploma, School of Museum of Fine Arts, Boston; M.F.A., State University of New York at Albany (1992)

Martin F. Thomson, *Instructor in Communications* (1993)
B.S., University of Delaware; M.S., West Chester University (1993)

Lecturers

Karen S. Bentzel, *Clinical Lecturer in Occupational Therapy* (1993)
B.S., Elizabethtown College; M.S., Boston University; OTR/L (1993)

Richard L. Evans, *Lecturer in Computer Science and Coordinator for Academic Computing* (1990)
B.S., University of Louisville; M.S., Naval Post-graduate School (1990)

Sharon K. Farley, *Clinical Lecturer of Occupational Therapy* (1994)
B.S., Elizabethtown College; M.S., Towson State University; OTR/L (1987)

David Ferruzza, *Lecturer in Physics and Director of Engineering Programs* (1993)
B.S., Newark College of Engineering; M.S., Massachusetts Institute of Technology (1990)

Candace H. O'Donnell, *Part-time Lecturer in English and Education and Supervisor of Secondary Education*
B.A., Washington University; M.A., Millersville State College

Debra D. Ronning, *Lecturer in Music and Director of the Preparatory Division*
B.S., M.A., Indiana University of Pennsylvania

Adjunct Faculty On-Campus

Sherry Albert, *Department of Occupational Therapy*
Certified Sign Language Interpreter, National Registry of Interpreters for the Deaf, Rockville, Md.

Cecil A. Archbold, *Department of Business*
M.S., Roosevelt University

David D. Bailey, *Department of Business*
M.Ad., Pennsylvania State University, Capitol Campus

Virginia B. Bates, *Department of Modern Languages*
B.A., Southern Illinois University; M.A., University of California at Los Angeles

Ernest S. Burch, Jr., *Department of Sociology/Anthropology*
B.A., Princeton University; M.A., Ph.D., University of Chicago

Ann S. Dinsmore, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

C. William Eckenrode, *Department of Business*
M.A., St. Francis College

Russell Eisenbise, *EXCEL Program*
M.A., Temple University

William J. Fulton, *Department of Business*
J.D., University of Pittsburgh

Laszlo Geder, *Department of Occupational Therapy*
M.D., Ph.D., University of Debrecen, Hungary

Richard H. Gifford, Jr., *Department of Business*
M.B.A., Gettysburg College

Jane R. Gockley, *Department of Physical Education*
M.S., Millersville University

Rebecca Griffin-Harvey, *Department of Business*
M.A., Pennsylvania State University

Donald Gross, *Department of Business*
M.B.A., Boston University

Luke K. Grubb, *Department of Fine and Performing Arts*
B.S., Lebanon Valley College; M.M., Indiana University

John A. Guerrisi, *Department of Business*
M.Ad., Pennsylvania State University, Capitol Campus

Richard C. Haefner, *Department of Physics*
A.B., Franklin and Marshall College; M.S., Ph.D., Pennsylvania State University

Doris J. Hall-Gulati, *Department of Fine and Performing Arts*
B.M., Peabody Conservatory of The Johns Hopkins University; M.M., University of Michigan

Robert B. Harnish, *Department of Religious Studies*
M.Div., Lutheran Theological Seminary at Gettysburg

Michael W. Hayes, *Department of Religious Studies*
A.B., University of Notre Dame; M.A.T., University of Virginia; M.A., St. Charles Borromeo Seminary; Ph.D., The Catholic University of America

Peggy S. Herr, *Department of Modern Languages*
B.A., University of the Pacific; M.A., Brigham Young University

Cynthia Hess, *Department of English*
B.S., Millersville State College; M.A., Millersville University

Dorothy A. Humpf, *Department of Sociology and Anthropology*
Ph.D., Pennsylvania State University

Carole L. Isaak, *Department of English*
B.A., Washington University; M.A., University of Northern Colorado

Richard A. Joyce, *Department of History*
M.A., San Francisco State University

Paul A. Kadjo, *Department of Business*
Ph.D., State University of New York

Linda Kirkpatrick, *Department of Fine and Performing Arts*
M.M., North Texas State University

Joseph Kujovsky, *Department of Business*
M.B.A., Auburn University

David E. Leithmann, *Department of Fine and Performing Arts*
B.S., M.Ed., West Chester State College

Gary R. Luckenbill, *Department of Fine and Performing Arts*
B.S., Indiana University of Pennsylvania; M.Ed., Pennsylvania State University

Mark A. McConaughy, *Department of Sociology and Anthropology*
Ph.D., University of Pittsburgh

Alison J. Mekeel, *Department of Fine and Performing Arts*
B.M., Oberlin Conservatory; M.M., New England Conservatory of Music

James A. Miller, *Department of Business*
J.D., University of Baltimore

Anna Surls Moore, *Department of Social Work*
B.A. Roosevelt University; M.S.W. University of Illinois

Grant Moore, *Department of Fine and Performing Arts*
B.A., Indiana University of Pennsylvania

Warren Munick, *Department of Business*
M.B.A., Miami University of Ohio

Paul M. Munyofu, *Department of Mathematical Sciences*
Ed.D., University of Pittsburgh

Steven J. Musser, *Department of Business*
Ph.D., Temple University

Bruce G. Nilson, *Department of Business*
M.S., Pennsylvania State University

Gretchen N. Patti, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

M. Benson Paull, *Department of Philosophy*
M.Th., Princeton Theological Seminary

Sue A. Redmond, *Department of Business*
B.S., Shippensburg State College

Janet Rowand, *Department of Occupational Therapy*
B.S., Elizabethtown College; OTR

Michael A. Scanlin, *Department of Physics*
B.A., Franklin and Marshall College; M.S., Pennsylvania State University

Carl E. Schroeder, *Department of Fine and Performing Arts*
B.M., M.M., Peabody Conservatory of Music

Laurie A. Showers, *Department of Mathematical Science*
B.S., Elizabethtown College

Arthur E. Simpson, Jr., *Department of Business*
M.B.A., Pennsylvania State University, Capitol Campus

William M. Sloane, *Department of Communications*
B.A., York College of Pennsylvania; J.D., Delaware Law School of Widener University; L.L.M., Temple University; S.J.D., Thomas Jefferson College of Law of Heed University

Janice Stouffer, *Department of Fine and Performing Arts*
B.S., Elizabethtown College

Stephen J. Suknaic, *Department of Sociology/Anthropology*
M.S., Shippensburg State College

Richard J. Tushup, *Department of Psychology*
Ph.D., University of Delaware

JoAnne Weaver, *Department of Business*
B.S., Mt. Saint Mary's College; C.P.A.

John Zurfluh, *Department of Fine and Performing Arts*
B.M., Eastman School of Music; M.M., D.M.A., Catholic University of America

Off-Campus Medical Technology

Judith Clark, *Harrisburg Hospital*, Harrisburg, Pa.
M.Ed., Pennsylvania State University; M.T. (ASCP)

John W. Eiman, *Abington Memorial Hospital*, Abington, Pa.
M.D., University of Pennsylvania School of Medicine

Gerald Fahs, *Lancaster General Hospital*, Lancaster, Pa.
M.D., Temple University School of Medicine

Nadine Gladfelter, *Lancaster General Hospital*, Lancaster, Pa.
M.S., Temple University; M.T. (ASCP)

Susan Guiswite, *Polyclinic Medical Center*, Harrisburg, Pa.
B.S., University of Pittsburgh; M.T. (ASCP) SBB

Brenda Kile, *York Hospital*, York, Pa.
M.S., Central Michigan University; M.T. (ASCP)

Him Kwee, *Harrisburg Hospital*, Harrisburg, Pa.
M.D., Airlangga University School of Medicine

John A. Mihok, *Monmouth Medical Center*, Long Branch, N. J.
B.S., University of Maryland; Catholic University of America; S.M. (ASCP)

Julian W. Potok, *Polyclinic Medical Center*, Harrisburg, Pa.
D.O., Philadelphia College of Osteopathic Medicine

Barbara Scheelje, *Abington Memorial Hospital*, Abington, Pa.
B.S., Colby-Sawyer College; M.T. (ASCP)

Sharon Strauss, *Reading Hospital and Medical Center*, West Reading, Pa.
B.S., Kutztown University

I. Donald Stuard, *Reading Hospital and Medical Center*, West Reading, Pa.
M.D., University of Rochester School of Medicine

John P. Whiteley, *York Hospital*, York, Pa.
M.D., Temple University School of Medicine

Louis Zinterhofer, *Monmouth Medical Center*, Long Branch, N.J.
M.D., Tulane Medical School

Psychology

Ralph Norgran, Department of Psychology, *Hershey Medical Center*, Hershey, Pa.
A.B., University of Pennsylvania, A.M., Ph.D. University of Michigan

Social Work

Margie Adelman, *First Step*, Harrisburg, Pa.
M.S.W., University of Pittsburgh

Carl Back, *Cities In Schools of Dauphin County*, Harrisburg, Pa.
M.Ed., Villanova University

David H. Bender, *Lancaster County Council on Alcoholism and Drug Abuse*, Lancaster, Pa.
B.A., Boston College

Constance V. Bieling, *Gnaden Huetten Memorial Hospital*, Lehigh, Pa.
M.S.W., Marywood College

Molly Casey-Mock, *Hershey Medical Center*, Hershey, Pa.
M.S.W., Maryland College

Patricia DeMooy, *Delaware County Juvenile Probation Services*, Media, Pa.
M.S.W., University of Pennsylvania

Kay Eisenhour, *Catholic Charities Adoption Department*, Harrisburg, Pa.
M.S.W., University of Maryland

Lynn G. Everhart, *Children's Playroom*, Harrisburg, Pa.
M.S., University of Texas

James Fuddy, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Pennsylvania

Laura Handford, *Capitol Area Intermediate Unit #15*, Camp Hill, Pa.
M.S.W.

Kevin Jacoby, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Maryland

John R. Lamb, *Cenacle Shelter*, Harrisburg, Pa.
M.S.W., University of Pennsylvania

Janice Lehr, Pennsylvania Chapter, *National Association of Social Workers*, Harrisburg, Pa.
M.S.W., West Virginia University

Pamela McDermott, *Hershey Medical Center*, Hershey, Pa.
M.S.W., University of Michigan

Jill McVey, *Lancaster County Children Youth Social Services*, Lancaster, Pa.
M.S.W., Temple University

Fiona Patterson, *Polyclinic Medical Center*, Harrisburg, Pa.
M.S.W., University of Pennsylvania

Gerald J. Ressler, *FOCUS Partial Hospital Program Philhaven Hospital*, Mt. Gretna, Pa.
M.S.W., Marywood College

Gary Shuey, *Cumberland County Children and Youth*, Carlisle, Pa.
M.S.W., Marywood College

Jo Sterner, *YWCA Rape Crisis/Domestic Violence Services*, Harrisburg, Pa.
B.S., Boston University

Leann Weaver, *Masonic Homes*, Elizabethtown, Pa.
M.S.W., Marywood College

Martin Yespe, *Crisis Intervention*, Harrisburg, Pa.
M.S.W., University of Maryland

Clinical Education Centers Occupational Therapy

Abington Memorial Hospital, Abington, Pa.

Adult Day Care, Hellam, Pa.

Allegheny General Hospital, Pittsburgh, Pa.

All Saints Hospital, Wyndmoor, Pa.

Allentown State Hospital, Allentown, Pa.

Allied Services for the Handicapped, Scranton, Pa.

Altoona Hospital, Altoona, Pa.

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Baltimore City Hospital, Baltimore, Md.

Bergen Pines County Hospital, Paramus, N.J.

Binghamton Psychiatric Center, Binghamton, N.Y.

Bryn Mawr Rehabilitation Hospital, Malvern, Pa.

Carlisle Hospital, Carlisle, Pa. Chambersburg Hospital, Chambersburg, Pa.

Charter Fairmount Institute, Philadelphia, Pa.

Chestnut Hill Rehabilitation Hospital, Wyndmoor, Pa.

Children's Hospital of Pittsburgh, Pittsburgh, Pa.

Clifton T. Perkin's Hospital Center, Jessup, Md.

Coatesville VA Medical Center, Coatesville, Pa.

Colonial Manor, York, Pa.

Community Hospital of Lancaster, Lancaster, Pa.

Community Rehabilitation Specialists, Erie, Pa.

Crozier-Chester Medical Center, Chester, Pa.

Danbury Hospital, Danbury, Conn.

Danville State Hospital, Danville, Pa.

Deer's Head Hospital Center, Salisbury, Md.

D. T. Watson Rehabilitation Hospital, Sewickley, Pa.

Eagleville Hospital and Rehabilitation Center, Eagleville, Pa.

Eastern Pennsylvania Psychiatric Institute, Philadelphia, Pa.

Eastern State Hospital, Williamsburg, Pa.

Easton Hospital, Easton, Pa.

Elizabethtown Hospital and Rehabilitation Center of the Pennsylvania State University, Elizabethtown, Pa.

Ephrata Community Hospital, Ephrata, Pa.

Eugenia Hospital, Lafayette Hills, Pa.

Fallston General Hospital, Fallston, Md.

Fort Howard VA Medical Center, Fort Howard, Md.

Francis Scott Key Medical Center, Baltimore, Md.

Freehold Area Hospital, Freehold, N.J.

Garden State Rehabilitation Center, Toms River, N.J.

Geisinger-Wyoming Valley Medical Center, Wilkes-Barre, Pa.

Georgetown University Hospital, Washington, D.C.

Good Samaritan Hospital, Baltimore, Md.

Good Samaritan Hospital, Lebanon, Pa.

Good Shepherd Home & Rehabilitation Hospital, Allentown, Pa.

Great Lakes Rehabilitation Hospital, Erie, Pa.

Hannemann University Hospital, Philadelphia, Pa.

Harrisburg Institute of Psychiatry, Harrisburg, Pa.

Harrisburg Hospital Community Mental Health Center, Harrisburg, Pa.

Harrisburg Polyclinic Medical Center,
Harrisburg, Pa.

Harrisburg State Hospital, Harrisburg, Pa.

Harmarville Rehabilitation Center,
Pittsburgh, Pa.

Haverford State Hospital, Haverford, Pa.

Heatherbank Rehabilitation Center,
Columbia, Pa.

Hershey Medical Center, Hershey, Pa.

Highland Health Facility, Baltimore, Md.
Hillside Hospital, Glen Oaks, N.Y.

Holy Spirit Hospital & Mental Health Center,
Camp Hill, Pa.

Homestead Nursing and Rehabilitation Center,
Willow Grove, Pa.

Hospital of the University of Pennsylvania,
Philadelphia, Pa.

Howard County General Hospital,
Columbia, Md.

Institute of Pennsylvania Hospital,
Philadelphia, Pa.

Institute of Psychiatry & Human Behavior
University of Maryland, Baltimore, Md.

Institute of Living, Hartford, Conn.

Jefferson Hospital, Pittsburgh, Pa.

John Heinz Institute, Wilkes-Barre, Pa.

Johns Hopkins Hospital of Baltimore,
Baltimore, Md.

Kessler Institute for Rehabilitation, West
Orange, N.J.

Lancaster General Hospital, Lancaster, Pa.

Leading Nursing and Rehabilitation Center,
Harrisburg, Pa.

Lebanon VA Medical Center, Lebanon, Pa.

Louden Memorial Hospital, Leesburg, Va.

McLean Hospital, Belmont, Mass.

Magee Rehabilitation Hospital,
Philadelphia, Pa.

Marlboro State Hospital, Marlboro, N.J.

Maryland General Hospital, Baltimore, Md.

Maryland Rehabilitation Hospital,
Baltimore, Md.

Medcenter One, Bismark, N.Dak.

Medical Center of Delaware, Wilmington, Del.

Medical Center at Princeton, Princeton, N.J.

Mercy Hospital, Pittsburgh, Pa.

Montebello Hospital, Baltimore, Md.

Montevista Center, Las Vegas, Nev.

Montgomery General Hospital, Olney, Pa.

Moss Rehabilitation Hospital, Philadelphia, Pa.

Muhlenberg Medical Center, Plainfield, N.J.

New York University – Cornell Medical Center,
White Plains, N.Y.

Norristown State Hospital, Norristown, Pa.

North Virginia Mental Health Institute,
Falls Church, Va.

Options, Lancaster, Pa.

Our Lady of Lourdes Hospital, Camden, N.J.

Philadelphia Psychiatric Center,
Philadelphia, Pa.

Philadelphia VA Medical Center,
Philadelphia, Pa.

Philhaven Hospital, Lebanon, Pa.

Pottstown Memorial Hospital, Pottstown, Pa.

Presbyterian University Hospital,
Pittsburgh, Pa.

Reading Hospital & Medical Center,
West Reading, Pa.

Reading Hospital Day Treatment Center,
West Reading, Pa.

Reading Rehabilitation Hospital, Reading, Pa.

Rehabilitation Hospital for Special Services,
Mechanicsburg, Pa.

Rehabilitation Hospital for Special Services,
York, Pa.

Rehabilitation Hospital for Special Services of
Nittany Valley, Bellefonte, Pa.

Rehabilitation Hospital of Altoona, Altoona, Pa.

Rehabilitation Institute of West Florida,
Pensacola, Fla.

Robert Wood Johnson Institute, Edison, N.J.

Rockland Psychiatric Center, Orangeburg, N.Y.

Rolling Hills Hospital, Elkins Park, Pa.

Sacred Heart Hospital, Norristown, Pa.

St. Agnes Hospital, Baltimore, Md.

Saint Francis General Hospital, Pittsburgh, Pa.

Saint John's Hospital, Pittsburgh, Pa.

Saint Joseph Hospital, Lancaster, Pa.

Saint Joseph Hospital, Reading, Pa.

St. Joseph's Hospital & Rehabilitation Center,
Tacoma, Wash.

Saint Lawrence Rehabilitation Center,
Lawrenceville, N.J.

Saint Joseph's Medical Center, Yonkers, N.Y.

Saint Luke's Hospital, Bethlehem, Pa.

Saint Margaret Memorial Hospital,
Pittsburgh, Pa.

St. Rita's Medical Center, Lima, Ohio

Saint Vincent Hospital and Medical Center,
New York, N.Y.

San Francisco General Hospital,
San Francisco, Calif.

Sinai Hospital, Baltimore, Md.

Southern Hills Regional Rehabilitation
Hospital, Princeton, W.Va.

Springfield Hospital Center, Sykesville, Md.

Taylor Hospital, Ridley Park, Pa.

Temple University Hospital, Philadelphia, Pa.

The Sheppard and Enoch Pratt Hospital,
Baltimore, Md.

Thomas B. Finan Center, Cumberland, Md.

Thomas Jefferson University Hospital,
Philadelphia, Pa.

Trenton Psychiatric Hospital,
West Trenton, N.J.

Truckee Meadow's Hospital, Reno, Nev.

University of Virginia Medical Center
Charlottesville, Va.

V.A. Medical Center, West Haven, Conn.

Walnut Creek Hospital, Walnut Creek, Calif.

Warren State Hospital, Warren, Pa.

Washington County Hospital Association,
Hagerstown, Md.

Welkind Rehabilitation Hospital, Chester, N.J.

Wernersville State Hospital, Wernersville, Pa.

Western State Hospital, Staunton, Va.

Williamsport Hospital, Williamsport, Pa.

Woodrow Wilson Rehabilitation Center,
Fishersville, Va.

The Administration

Office of the President

Gerhard E. Spiegler
President
Ph.D., University of Chicago

Robert L. Odean
Special Assistant to the President
M.Div., Northern Baptist Theological Seminary

Martha A. Farver-Apgar
Director of Personnel

P. Joan Austin
Chaplain
Ed.D., Temple University

Academic Affairs

Frederick F. Ritsch
Provost and Dean of the Faculty
Ph.D., University of Virginia

Martha A. Eppley '62
Associate Dean of the Faculty and Registrar
M.B.A., Indiana University

Gloria F. Hess
Director of Records
M.A.R., Lancaster Theological Seminary

Robert P. Wheelersburg
Assistant Dean of the Faculty
Ph.D., Brown University

Carole Isaak
Coordinator of Special Advising
M.A., University of Northern Colorado

Nelson P. Bard, Jr.
Director of the Library
Ph.D., University of Virginia

Peter J. DePuydt
Public Services Librarian
M.S., University of Wisconsin-Milwaukee

Naomi L. Hershey
Reference Librarian
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Sylvia Tiffany Morra
Librarian, Readers Services
M.S.L.S., North Carolina Central University

Gordon McK. Bateman
Director of Financial Aid
M.S., Indiana University

M. Clarke Paine
Assistant Director of Financial Aid
B.S., Rider College

Carolyn A. Wharton
Assistant Director of Financial Aid
B.S., Indiana University of Pennsylvania

Ronald D. Potier
Director of Admissions
A. B., Middlebury College

Daniel F. Evans
Associate Director of Admissions
B.A., University of Richmond

Susan C. Mitchell '85
Associate Director of Admissions
B.A., Elizabethtown College

Sally Hillman Redman
Associate Director of Admissions
B.A., University of Delaware

Amy Hagemann
Assistant Director of Admissions
B.S., Muhlenburg College

Udochi Amachi '92
Admissions Counselor
B.A., Elizabethtown College

W. Kent Barnds
Admissions Counselor
B.A., Gettysburg College

John J. Marisic
Director of Computing
B.A., The Johns Hopkins University

Richard L. Evans
Lecturer in Computing Sciences and Coordinator for Academic Computing
M.S., Naval Postgraduate School

Jason D. Isett
Personal Computer Coordinator

Nevin O. Garner
Associate Director of Data Processing Services

Gregory T. Hermanson
Systems Manager, Data Center
B.S., California University of Pennsylvania

Kathryn M. Tyler
Information Center Programmer
B.S., Millersville University

Barbara R. Maroney
Director of Continuing Education
M.Ed., Temple University

David B. Dentler
Assistant Director of Continuing Education
M.A., Temple University

Steven M. Rutter
Director of Instructional Services
A.S., Electronics Institute

Robert J. Kennedy III
Assistant Director of Instructional Services
B.A., St. John Fisher College

Business Affairs

John M. Shaeffer
Treasurer
M.B.A., University of Pittsburgh

Daniel J. Benny
Director of Public Safety
M.A., Vermont College

Edwin L. Cable
Controller/Business Manager
M.B.A., Temple University

Mary W. Hill '71
Post Office Manager
B.A., Elizabethtown College

J. Robert Hollinger '72
Chief Accountant
B.S., Elizabethtown College

M. Caroline Lalvani
Director of Conferences
B.S., University of Illinois, Urbana-Champaign

Keith M. Marks
College Store Manager

Martha A. Farver-Apgar
Director of Personnel

Anne L. Moore '94
Assistant Director of Personnel
B.A., Elizabethtown College

Larry W. Bekelja
Director of Plant Operations
B.S.Ed., Shippensburg State College

David R. Salmon
Director of Food Services
A.A.S., State University of New York

College Life

Richard R. Crocker
Dean of College Life
Ph.D., Vanderbilt University

James R. Hilton, Sr. '66
Associate Dean of College Life
M.S., Shippensburg State College

Shirley A. Deichert
Director of the Learning Center
M.S., Temple University

Deborah L. Moorhead
Assistant Dean of College Life
M.A., University of Arkansas

Beverly V. Piscitelli
Director of Personal and Career Counseling Services
M.S., University of Bridgeport; N.C.C.

P. Joan Austin
Chaplain and Counselor
Ed.D., Temple University

H. Andrew Sagar III
Staff Counselor
Ph.D., University of Pittsburgh

Cindy Wilhelm-Ernharth
Career Counselor
M.A., Trenton State College

Alexandra Spayd
Acting Director, Health Center
Nursing Diploma, St. Joseph's
School of Nursing

D. Kenneth Ober
Director of Athletics
M.S., West Chester State College

Tina L. Hill
*Assistant Director of Athletics
and Staff Instructor*
M.S.M., University of Richmond

Arthur D. Roderick III '74
*Head Soccer Coach and Staff
Member in the Department of
Physical Education*
B.S., Elizabethtown College

Robert A. Schlosser
*Head Basketball Coach and
Director of Intramural Athletics*
B.S., East Stroudsburg

John R. Saddlemire
*Assistant Dean of College Life and
Director of Residence Life
and Student Activities*
Ph.D., The Pennsylvania State University

Memory L. D'Agostino
Assistant Director of Residence Life
M.S., Shippensburg University

Joseph M. Watson
*Assistant Director of Student Activities/
Area Coordinator*
M.Ed., Pennsylvania State University

Institutional Advancement

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Vice President for Institutional Advancement
B.A., Temple University

Bruce G. Holran
Director of College Relations
A.B., Colgate University

Jerry R. Britton
Director of Publications
B.S., Pennsylvania State University

Matthew D. Mackowski '93
*Assistant Director of College Relations
and Director of Sports Information*
B.S., Elizabethtown College

Julie A. Myers
Director of Alumni, Development Programs
B.S., Towson State University

Jerald L. Garland '59
*Associate Director of Alumni,
Development Programs*
M.S., Temple University

J. Michael Pressimone
Director of Development
B.F.A., The Catholic University of
America

J. Mark Bushong
Director of Church Relations

Patrick J. Hall
*Associate Director of Development,
Foundation and Corporate Programs*
M.A., Fordham University

Ellen M. Simpson
Assistant Director of Development
B.A., Ohio Wesleyan University

Zane G. Gizzi
*Assistant Director of the
Annual Fund*
M.Ed., Westminster College

Daniel M. Morra
Researcher/Writer
M.A., Slippery Rock University

Administrative Staff

Helen S. Bartlett
Biology Laboratory Assistant
B.S., Virginia Polytechnic Institute

Jean D. Beck
*Administrative Secretary to the Provost and
Dean of the Faculty*

John R. Becker
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Secretary, College Relations

Bernice M. Booth
Administrative Secretary to the President
A.S., Harrisburg Area Community College

Eugene L. Booth
Equipment Supervisor, Athletics Dept.

Michelle Degler '93
Manager, Jay's Nest
B.S., Elizabethtown College

Barbara Strong Ellis
Library Assistant, High Library
B.A., Ouachita Baptist University

Denise L. Gillin
*Administrative Secretary to Executive Assistant
to the President and Secretary of the College*
A.S.B., Central Penn Business School

Michael P. Hamilton, Sr.
Chef/Kitchen Manager

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*Secretary to the Dean of College Life and
Associate Dean of College Life*

Maria E. Horner
Manager of Student Accounts, Business Office
B.S., Millersville University

Patricia S. Judd
Administrative Staff, High Library
B.S., Juniata College

Mary Ann Killian '58
Duplicating Supervisor
B.S., Elizabethtown College

Claudia Lane
Operations Manager, Food Services

Tamera L. Longsderff
Food Service Manager

Doris J. McBeth
*Administrative Secretary to Vice President for
Institutional Advancement*

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Tana L. Parrett '69
Staff Accountant, Business Office
B.S., Elizabethtown College

Mary K. G. Puffenberger
*Administrative Staff, Readers' Services, High
Library*
B.A., Bridgewater College

Randel J. Rossi
Assistant Director of Food Services

Deborah G. Sagar
*Administrative Secretary, Center for Continuing
Education*
B.A., The American University

Denise F. Shaieblly
Clerk/Operator, Data Center

Dorothy J. Troutman '80
Coordinator of the Media Center
B.S., Elizabethtown College

Carol H. Warfel
Library Assistant, High Library
M.A., Indiana University of Pennsylvania

Janet I. Waser
Computer Operator, Data Center

Mary A. Weidman '91
Assistant Manager, College Store
B.A., Elizabethtown College

Karen Ziegler
Secretary, Office of College Life

Kathy G. Zubik
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A.A.S., Reading Area Community College

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Associate Professor of Special Education, (retired), Millersville University, Millersville, Pa.

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Elizabethtown, Pennsylvania
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Note: Year indicates expiration of term.



Index

A

Academic Advising 9
 Academic Dishonesty 17
 Academic Dismissal 15
 Academic Due Process 17
 Academic Good Standing 15
 Academic Honors 15
 Academic Judicial System 17
 Academic Majors 3
 Academic Minors 3
 Academic Probation 15
 Academic Program 3
 Core Program 3
 Degrees offered 3
 Majors offered 3
 Minors offered 3
 Academic Standing 15
 Accounting 25. *See also* Business, Dept. of
 Adding Courses 12
 Administration 84
 Advanced placement 8
 Advising 9
 Allied Health Programs 70
 Anabaptist and Pietist Studies Minor 73
 Anthropology 20. *See also* Sociology and
 Anthropology, Dept. of
 Areas of Understanding 4
 Auditing Courses 10

B

Biology, Dept. of 20
 Biology Health Professions 8
 Board of Trustees 86
 Brethren Colleges Abroad program 7
 Business, Dept. of 23

C

Calculation of Grades 13
 Challenge Testing 9
 Change of Major 10
 Change of minor 10
 Change of Personal Information 10
 Change of Registration 12
 Checksheets 10
 Chemistry, Dept. of 28
 Class Attendance 12
 Class Standing 14
 CLEP Examinations 8
 College Assessment Programs 9
 College Scholars 15
 Common Core 4
 Communications, Dept. of 31
 Computer Science, Dept. of 34
 Continuing Education 18
 Convocation 19
 Core Program 3
 Areas of understanding 4
 Common core 4
 Course Load 10
 Credit by Examination 8
 Credit Requirements 16
 Credits 13

D

Dance. *See* Fine and Performing Arts, Dept. of
 Dean's List 15
 Declaration of major 10
 Declaration of minor 10
 Degrees Offered 3
 Departmental Honors 15
 Directed Study 7
 Directory 77
 Administrative Staff 85
 Board of Trustees 86
 Faculty 77
 The Administration 84
 Dropping Courses 12

E

Early Warning System 14
 Earth Science. *See* Physics, Dept. of
 Economics 27. *See also* Business, Dept. of
 Education, Dept. of 36
 Educational Philosophy and Objectives 2
 Engineering. *See* Physics, Dept. of
 English, Dept. of 38

F

Final Examination Policy 14
 Fine and Performing Arts, Dept. of 41
 Forestry and Environmental Management 71
 French. *See* Modern Languages, Dept. of
 Full-time status 10

G

General Science Certification 71
 General Science Minor 72
 German. *See* Modern Languages, Dept. of
 Grade Appeals 18
 Grade Point Average 16
 Grades 13
 Graduation 16
 Ceremony 16
 Credit requirements 16
 Grade point average 16
 On-campus credits 16

H

History, Dept. of 46
 Honors 15
 Human Services Minor 76

I

Incomplete Grades 14
 Independent Study 7
 Individual Program Adjustments 15
 Interdisciplinary Programs 69
 Anabaptist and Pietist Studies minor 73
 Biology/Allied Health 70
 Forestry and Environmental Management 71
 General Science Certification 71
 International Studies minor 74
 Peace and Conflict Studies minor 74
 Pre-law 75
 Pre-medical 69
 Public Administration minor 75
 Social Studies Certification 72
 International Studies Minor 74
 Internships 8

J

Joint Institution Programs 7
 Biology health professions 8
 Pre-engineering 8
 Pre-forestry 7

L

Leave of Absence 13
 Lecture Series 19
 Lecturers 80

M

Mathematical Sciences, Dept. of 48
 Mission Statement 2
 Modern Languages, Dept. of 50
 Music. *See* Fine and Performing Arts, Dept. of

O

Occupational Therapy, Dept. of 52
 Off-Campus Study 7
 On-Campus Credits 16
 Overload Credits 10

P

Part-time status 10
 Pass/No Pass Grading 14
 Peace and Conflict Studies Minor 74
 Philosophy, Dept. of 55
 Physical Education and Health, Dept. of 56
 Physics, Dept. of 57
 Placement Testing 9
 Pledge of Integrity 17
 Political Science, Dept. of 59
 Pre-allied Health 8
 Pre-engineering 8
 Pre-forestry 7
 Pre-Law Program 75
 Pre-medical Programs 69
 Preregistration 11
 Primary Care Pre-Admissions Program 70
 Program Variations and Options 6
 Psychology, Dept. of 61
 Public Administration Minor 75

Q

Quality Points 13

R

Rank in Class 14
 Readmission 13
 Registration 11
 Pre-registration 11
 Registration Holds 12
 Religious Studies, Dept. of 63
 Repeating Courses 10

S

Schedule Changes 12
 Secondary Education. *See* Depts. of Biology,
 Chemistry, English, Mathematics
 Social Studies Certification 72
 Social Work, Dept. of 65
 Sociology and Anthropology, Dept. of 66
 Spanish. *See* Modern Languages, Dept. of
 Special Privileges 15
 Special Programs 19
 Student Responsibilities 10
 Study Abroad 7

T

Theatre. *See* Fine and Performing Arts, Dept. of
 Transcripts 11
 Transfer of Credits 11
 Trustees 86
 Tutorials 7

V

Variations to Program 6
 Visual Arts. *See* Fine and Performing Arts, Dept. of

W

Washington Semester and World Capitols
 Program 8
 Withdrawal 12
 From class 12
 From College 12
 Medical 13

0525

